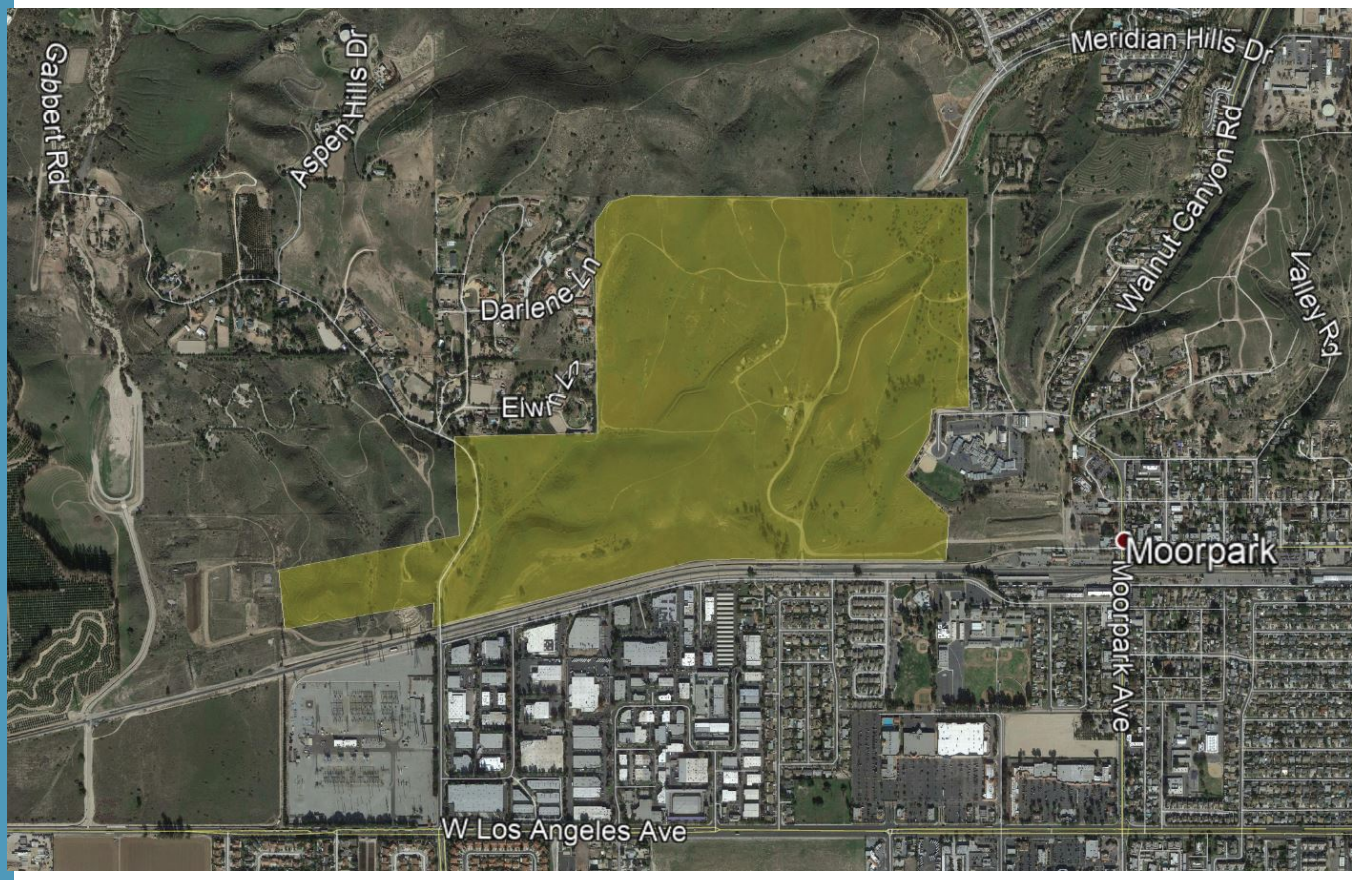
City of Moorpark

Final Environmental Impact Report for the Proposed Hitch Ranch Specific Plan SCH # 2019070253



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Prepared for:

City of Moorpark
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Moorpark, CA 93021

May 2022

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1.0 INTRODUCTION

This document is the Final Environmental Impact Report ("Final EIR" or "EIR") for the City of Moorpark Hitch Ranch Specific Plan (Proposed Project). This document together with the Draft EIR and its technical appendices comprise the Final EIR. The document has been prepared by the City of Moorpark in accordance with the California Environmental Quality Act (CEQA).

The Final EIR is required under Section 15132 of the *State CEQA Guidelines* to include the Draft EIR, comments and recommendations received on the Draft EIR, the responses of the lead agency to significant environmental issues raised by those comments in the review and consultation process, and any other relevant information added by the lead agency (including minor changes to the EIR). A Mitigation Monitoring and Reporting Program (MMRP) is also required; it can be a separate document, or, as in this case, included in the Final EIR.

The evaluation and response to comments is an important part of the CEQA process as it allows the following: (1) the opportunity to review and comment on the methods of analysis contained within the Draft EIR; (2) the ability to detect any omissions which may have occurred during preparation of the Draft EIR; (3) the ability to check for accuracy of the analysis contained within the Draft EIR; (4) the ability to share expertise; (5) the ability to discover public concerns.

This document provides revisions to the Draft EIR made in response to written comments, staff review, and/or changes to the Proposed Project. These revisions also correct, clarify, and amplify the text of the Draft EIR, as appropriate, and do not alter the conclusions of the Draft EIR.

1.1 PROCESS

In accordance with Section 15050 of the *State CEQA Guidelines* the City of Moorpark is the lead agency that prepared both the Draft EIR and Final EIR for the Hitch Ranch Specific Plan. The City prepared and circulated the Draft EIR for a period of 45 days, extending from February 18, 2022 and ending on April 4, 2022. A Notice of Availability of the Draft EIR was transmitted to responsible and trustee agencies, regulatory agencies, and others to request comments on the Draft EIR, pursuant to *State CEQA Guidelines* Section 15086. The Draft EIR was available for review at the City of Moorpark City Hall, Development and Community Services Building, at 799 Moorpark Avenue, Moorpark, CA 93021, and the Moorpark Library, at 699 Moorpark Avenue, Moorpark California, 93021. In addition, an electronic copy of the Draft EIR was posted on the City's website at http://www.moorparkca.gov/hitchranch.

The City of Moorpark hosted a public meeting to gather public comments about the Hitch Ranch Specific Plan on March 14, 2022, at 7:00 PM at City Hall in the Apricot Room, located at 799 Moorpark Avenue, Moorpark, CA 93021; the meeting was also available to join via a Zoom link at: https://www.moorparkca.gov/358/PlanningCommission

Comments on the Draft EIR were received during the comment period and the public meeting, and those comments are responded to in this Final EIR. The Final EIR, together with the Hitch Ranch Specific Plan, will be submitted to the City Council for review, and the Council will consider certification of the Final EIR and approval of the Hitch Ranch Specific Plan.

1.2 CONTENT OF THE FINAL EIR

As discussed above, the primary intent of the Final EIR is to provide a forum to air and address comments pertaining to the analysis contained within the Draft EIR. Pursuant to Section 15088 of the *State CEQA Guidelines*, the City has reviewed and addressed all comments received on the Draft EIR by the comment period deadline. Included within the Final EIR are the written and oral comments that were submitted during the public comment period and during the public meeting.

In order to adequately address the comments provided by interested agencies and the public in an organized manner, this Final EIR includes the following chapters and appendices:

- **Section 1.0: Introduction**: This chapter provides a brief introduction to the Final EIR and its contents.
- **Section 2.0: Responses to Comments**: This chapter provides a list of commenting agencies, organizations, and individuals. Responses to all comments on the Draft EIR are also included in this chapter.
- **Section 3.0: Corrections and Revisions**: This chapter provides a list of corrections and revisions to the Draft EIR. None of the changes significantly impact the conclusions presented in the Draft EIR.
- **Section 4.0: Mitigation Monitoring and Reporting Program**: This chapter includes the MMRP prepared in compliance with the requirements of Section 21081.6 of the California Public Resources Code and Section 15091(d) and 15097 of the *State CEQA Guidelines*.

The Final EIR also incorporates by reference the previously circulated Draft EIR.

1.3 REVIEW AND CERTIFICATION OF THE FINAL EIR

Consistent with CEQA (Public Resource Code Section 21092.5), responses to agency comments are being forwarded to each commenting agency no less than 10 days prior to certification of the Final EIR. In addition, responses are also being distributed to all commenters who provided an address. The Final EIR is available for public review at the following locations:

City of Moorpark City Hall,
Development and Community Services Building,
799 Moorpark Avenue
Moorpark, CA 93021

Moorpark Library
699 Moorpark Avenue
Moorpark, CA 93021

The Final EIR can also be downloaded or reviewed via the Internet at:

http://www.moorparkca.gov/hitchranch

After completing the Final EIR, and before approving the project, the Lead Agency must make the following three certifications as required by Section 15090 of the *State CEQA Guidelines*:

- *That the Final EIR has been completed in compliance with CEQA;*
- *That the Final EIR was presented to the decision-making body of the Lead Agency, and that the decision-making body reviewed and considered the information in the Final EIR prior to approving the project; and*
- *That the Final EIR reflects the Lead Agency's independent judgment and analysis.*

Pursuant to *State CEQA Guidelines* Section 15091(a), if an EIR that has been certified for a project identifies one or more significant environmental effects, the lead agency must adopt "Findings of Fact." For each significant impact, the lead agency must make one of the following findings:

1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the EIR.

2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

3. Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the final EIR.

Each finding must be accompanied by a brief explanation of the rationale for the finding. In addition, pursuant to *State CEQA Guidelines* Section 15091(d), the agency must adopt, in conjunction with the findings, a program for reporting on or monitoring the changes that it has either required in the project or made a condition of approval to avoid or substantially lessen environmental effects. These measures must be fully enforceable through permit conditions, agreements, or other measures. This program is referred to as the MMRP.

Additionally, pursuant to Section 15093(b) of the *State CEQA Guidelines*, when a lead agency approves a project that would result in significant unavoidable impacts that are disclosed in the Final EIR, the Agency must state its reasons for supporting the approved action in writing. This Statement of Overriding Considerations is supported by substantial information in the record, which includes both the Draft and Final EIRs. Since implementation of the Hitch Ranch Specific Plan would result in significant unavoidable impacts, the decision-making body (the Moorpark City Council) would be required to adopt a Statement of Overriding Considerations if it approves the Hitch Ranch Specific Plan.

2.0 COMMENTS ON THE DRAFT EIR AND RESPONSES TO COMMENTS

2.1 INDEX TO COMMENTS

As described in **Section 1.0, Introduction**, this chapter includes copies of written comments received by hand-delivered mail or electronic mail or provided at the public meeting held during the public review and comment period on the Draft EIR between February 18, 2022, and April 4, 2022. A recording of the public meeting held on March 14, 2022, is available for viewing on the City's website at the following link: https://moorpark.granicus.com/player/clip/2481?view_id=141&redirect=true
All agencies, organizations, and individuals who commented on the Draft EIR are listed in **Table 2.0-1, Index to Comments,** below.

All comments received have been numbered, and the numbers assigned to each comment are indicated on the written responses that follow. Each correspondence is identified by an alphabetical designator to define the group the correspondence belongs to (e.g., "A" = "Agency"). Multiple letters from the same senders are labeled with the alphabetic designator, and the name of the sender, and a numeric designator (e.g., "A-Sender-1"). Specific comments within each communication are identified by a numeric designator that reflects the numeric sequence of the specific comment within the correspondence (e.g., "A-Sender-1" for the first comment in Comment Letter A-Sender).

Responses focus on comments that pertain to the adequacy of the analysis in the Draft EIR or to other aspects pertinent to the potential effects of the Project on the environment pursuant to CEQA. Comments that address topics beyond the purview of this EIR or CEQA are noted as such for the public record. Where comments have triggered changes to the Draft EIR, these changes are indicated in the response, and all changes to the Draft EIR are consolidated in **Section 3.0, Revisions to the Draft EIR**.

Table 2.0-1
Index to Comments

Commenter Number	Agency/Organization/Individual – Date
State Agencies	
A-CDFW-1	California Department of Fish and Wildlife – 04/04/22
A-CDFW-2	California Department of Fish and Wildlife – 04/04/22
A-DWR	California Department of Water Resources – 04/01/22
Local Agencies	
A-FCGMA-1	Fox Canyon Groundwater Management Agency – 03/29/22

Commenter Number	Agency/Organization/Individual – Date
A-FCGMA-2	Fox Canyon Groundwater Management Agency – 03/29/22
A-LA_RWQCB-1	Los Angeles Regional Water Quality Control Board – 04/04/22
A-LA_RWQCB-2	Los Angeles Regional Water Quality Control Board – 04/04/22
A-VCAPCD-1	Ventura County Air Pollution Control District – 04/04/22
A-VCAPCD-2	Ventura County Air Pollution Control District – 04/04/22
A-VCFD-1	Ventura County Fire Department – 04/01/22
A-VCFD-2	Ventura County Fire Department – 03/30/22
A-VCFD-3	Ventura County Fire Department – 03/31/22
A-VCPW TD	Ventura County Public Works, Transportation Division – 04/01/22
A-VCPW WP	Ventura County Public Works, Watershed Protection – 04/04/22
A-VCPW WRD	Ventura County Public Works, Water Resources Division – 03/24/22
A-VCPW W&S-1	Ventura County Public Works, Water and Sanitation – 03/24/22
A-VCPW W&S-2	Ventura County Public Works, Water and Sanitation – 03/24/22
A-VCRMA EHD	Ventura County Resource Management Agency, Environmental Health – 03/09/22
A-VCTC-1	Ventura County Transportation Commission – 03/28/22
A-VCTC-2	Ventura County Transportation Commission – 03/28/22
Organizations	
O-SYB Chumash-1	Santa Ynez Band of Chumash Indians – 02/25/22
O-SYB Chumash-2	Santa Ynez Band of Chumash Indians – 02/25/22
Individuals	
I-Anonymous	Anonymous – 04/04/22
I-Bracken	Shane Bracken – 03/19/22
I-Bradley	Dale Bradley – 03/21/22
I-Bruckner-1	Gayle Bruckner – 04/04/22
I-Bruckner-2	Gayle Bruckner – 04/04/22
I-Bruckner-3	Gayle Bruckner – 04/04/22
I-Diamond	Jennifer Diamond – 04/03/22
I-Diana	Diana S – 03/21/22
I-Hartley	Connie Hartley – 03/16/22
I-Jacobs	Robert Jacobs – 03/31/22
I-Jarvis	Ryan Jarvis – 04/03/22
I-Leavitt	Adam Leavitt – 04/02/22
I-Mayfield	William Mayfield – 04/04/22
I-Mikos	Roseann Mikos – 04/04/22
I-Miller-1	Doris Miller -004/04/22
I-Miller-2	Doris Miller – 04/04/22
I-Miller-3	Doris Miller – 04/04/22
I-Moffat-Ducharme-1	Patricia Moffat-Ducharme – 03/14/22
I-Moffat-Ducharme-2	Patricia Moffat-Duchame – 04/03/22
I-Morser	Laura Morser – 03/16/22
I-Noel-1	Sharon Noel – 04/01/22
I-Noel-2	Sharon Noel – 04/04/22
I-Osipian-1	Armen Osipian – 03/14/22
I-Osipian-2	Armen Osipian – 03/16/22

Commenter Number	Agency/Organization/Individual – Date
I-Perreyclear-1	Wes Perreyclear – 03/13/22
I-Sierra	Christopher Sierra – 03/07/22
I-Stratton	Chad Stratton – 04/03/22
I-Tamayo	Salvador Tamayo – 04/04/22
I-Wagenbach-1	Nancy Wagenbach – 04/04/22
I-Wagenbach-2	Nancy Wagernbach – 04/04/22
I-Wareham	Martin and Barbara Wareham – 04/04/22
Planning Commission Hearing – Oral Comments – March 14, 2022	
1	Rene Mayfield
2	Barbara Wareham
3	Patricia Ducharme
4	Gail Bruckner
5	Sharon Noel
6	Sharon Schieltz
7	Mark Taillon
8	Marisela Morales (via Zoom)
9	Salvador Tamayo (via Zoom)
Comments Received after the Closing of the Comment Period	
I-Dimberg	Erin Dimberg – 04/06/22
I-Miller-4	Doris Miller – 04/05/22
I-Miller-5	Doris Miller – 04/05/22
I-Sinutko	Nicole Sinutko -04/04/22
I-Terjimanian	Alin and Ayk Terjimanian - 04/04/22

2.2 RESPONSES TO COMMENTS

This section presents all written comments received on the Draft EIR and responses to those comments.

A-CDFW-1

From: Castanon, Angela@Wildlife [Angela.Castanon@Wildlife.ca.gov]
Sent: Monday, April 4, 2022 3:40 PM
To: Douglas Spondello
Cc: Gibson, Steve@Wildlife; Hailey, Cindy@Wildlife; Galli, Emily@Wildlife; Wildlife CEQA Comment Letters; OPR State Clearinghouse
Subject: CA Department of Fish and Wildlife Comments- Hitch Ranch DEIR (SCH# 2019070253)

Hello Mr. Spondello,

Attached are the California Department of Fish and Wildlife's comments on the Hitch Ranch Specific Plan DEIR, (SCH No. 2019070253). 1

Please let me know if you have any questions.

Angela Castanon
Environmental Scientist
Habitat Conservation and Planning
4665 Lampson Ave. Suite C
Los Alamitos, CA 90720
Angela.castanon@wildlife.ca.gov
Mobile: 562-640-0443

Letter A-CDFW-1 California Department of Fish and Wildlife

Response to Comment A-CDFW-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

April 4, 2022

Mr. Douglas Spondello
City of Moorpark
799 Moorpark Avenue
Moorpark, CA 93021
DSpondello@moorpark.ca.gov

Subject: Hitch Ranch Specific Plan Project, Draft Environmental Impact Report, SCH #2019070253 Ventura County, City of Moorpark

Dear Mr. Spondello:

The California Department of Fish and Wildlife (CDFW) has reviewed the City of Moor Park's (City) Draft Environmental Impact Report (DEIR) for the Hitch Ranch Specific Plan (Project). The City, as Lead Agency, prepared a DEIR pursuant to the California Environmental Quality Act (CEQA; Pub. Resources Code, § 21000 et. seq.) with the purpose of informing decision-makers and the public regarding potential environmental effects related to the Project. Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife or be subject to Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust for the people of the state [Fish & Game Code, §§ 711.7, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, [§ 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). CDFW is also directed to provide biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect state fish and wildlife resources.

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CDFW is also submitting comments as a Responsible Agency under CEQA (Public Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & Game Code, § 1600 *et seq.*). To the extent implementation of the Project as proposed may result in "take" of any species protected under the California Endangered Species Act (CESA; Fish & Game Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & Game Code, §1900 *et seq.*), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

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Project Description and Summary

Objective: The City of Moorpark has proposed a Project which will develop over 270 acres of land will include 755 dwelling units, newly paved roads, multiple water detention basins, private recreation areas, greenbelts, and public multi-use trails. The surrounding land use areas include residential and open space to the north; institutional, residential, light industrial and commercial use to the south; residential and commercial to the east; and single-family residential, rural and open spaces to the west. The Project also provides three other alternatives to the proposed plan.

Location: The Project is proposed in the City of Moorpark, in southeastern Ventura County between the Simi Hills and Little Simi Valley. The site is approximately 277.30 acres and located approximately 900 feet west of State Route 23 and extends approximately 1,400 feet west of Gabbert Road. Land uses within the project footprint include grazing land (172 acres), farmland of local importance (96.4 acres), urban/built-up land (5 acres), and "other" land (4 acres). 1

Comments and Recommendations

CDFW commends the City in its attempt to adequately address the impacts facing biological resources within the DEIR. CDFW offers the comments and recommendations below to assist the City in adequately identifying, avoiding, and/or mitigating significant, or potentially significant, direct and indirect impacts on fish and wildlife biological resources based on the planned activities of this proposed Project. CDFW recommends the measures below be included in a science-based monitoring program with adaptive management strategies as part of the Project's CEQA mitigation, monitoring and reporting program (Public Resources Code, § 21081.6 and CEQA Guidelines, § 15097). Additional comments or other suggestions may also be included to improve the document.

Specific Comments

Comment #1: Impacts to Special-Status Plant Species

Issue: A nine-quad review of the California Natural Diversity Database (CNDDB) revealed several special status plants that have potential to occur in the geographical area(s). Focus surveys were conducted in 2016. Without more current surveys the Project may result in a significant impact to special-status plants.

Specific impact: CDFW considers plant communities, alliances, and associations with a statewide ranking of S1, S2, S3, and S4 as sensitive and declining at the local and regional level (Sawyer et al. 2008). An S3 ranking indicates there are 21-80 occurrences of this community in existence in California, S2 has 6-20 occurrences, and S1 has less than 6 occurrences. The Project may have direct or indirect effects to these sensitive species. 2

The following special status plants were included in the nine-quad CNDDB review: Lyon's pentachaeta (*Pentachaeta lyonii*); Santa Susana tarplant (*Deinandra minthornii*); Conejo dudleya (*Dudleya parva*); marcescent dudleya (*Dudleya cymosa ssp. marcescens*); Agoura Hills dudleya (*Dudleya cymosa ssp. gourensis*); Blochman's dudleya (*Dudleya blochmaniae ssp.*

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Blochmaniae); Verity's dudleya (*Dudleya verity*); Braunton's milk-vetch (*Astragalus brauntonii*); California Orcutt grass (*Orcuttia californica*); and Conejo buckwheat (*Eriogonum crocatum*).

Why impact would occur: Although multiple focus surveys have been conducted at the Project site the most recent focus surveys occurred in 2016. Thus, 2016 observations may not be representative of current conditions. Rare plants may have established in the Project site since the 2016 survey. Presence/absence determinations of rare plants in the Project area, specifically areas that would be impacted due to Project implementation (e.g., existing facilities), should be determined based on recent surveys. CDFW generally considers biological field assessments for rare plants valid for a period of up to three years.

Moreover, the DEIR focuses mainly on replacement of vegetation and does not offer any mitigation measures in the event a rare plant is discovered on-site. Disclosure, avoidance, and mitigation measures should all be provided within the DEIR. Take of CESA-listed rare plants may only be permitted through an incidental take permit (ITP) or other authorization issued by CDFW pursuant to California Code of Regulations, Title 14, section, 786.9 subdivision (b). CDFW is concerned the loss of CESA-listed rare plants may occur if appropriate avoidance, minimization, and/or mitigation for these species is not adopted.

Evidence impact would be significant: Impacts to special-status plant species should be considered significant under CEQA unless they are clearly mitigated below a level of significance. Inadequate avoidance, minimization, and mitigation measures for impacts to these sensitive plant species will result in a Project(s) continuing to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or U.S. Fish & Wildlife Service (USFWS). Additionally, plants that have a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) of 1A, 1B, 2A, and 2B are rare throughout their range, endemic to California, and are seriously or moderately threatened in California. All plants constituting CRPR 1A, 1B, 2A, and 2B meet the definitions of CESA and are eligible for State listing. Impacts to these species or their habitat must be analyzed during preparation of environmental documents relating to CEQA, as they meet the definition of rare or endangered (CEQA Guidelines, § 15380). Please see CNPS Rare Plant Ranks website (https://www.cnps.org/rare-plants/cnps-rare-plant-ranks) for additional rank definitions (CNPS 2020).

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Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure #1: CDFW recommends including avoidance, minimization, and/or mitigation measure language articulating the need to perform focused surveys for sensitive/rare plants on-site and disclosing the results prior to the implementation of Projects. Based on the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFWa 2018) (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959), a qualified biologist should "conduct surveys in the field at the time of year when species are both evident and identifiable. Usually this is during flowering or fruiting." Final CEQA documentation, for a specified Project(s), should provide a thorough discussion on the presence/absence of sensitive plants on-site and identify measures to protect sensitive plant communities from Project-related direct and indirect impacts.

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Mitigation Measure #2: If rare or sensitive plants are found on or near the footprint of the Project, CDFW recommends the DEIR provide measures to fully mitigate the loss of individual ESA- and CESA-listed plants and habitat. The DEIR should provide a map showing which plants or populations will be impacted and provide a table that clearly documents the number of plants and acres of supporting habitat impacted, and plant composition (e.g., density, cover, abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, abundance of each species).

Mitigation Measure #3: If rare or sensitive plants are found on or near the footprint of the Project, the DEIR should provide species-specific measures to fully avoid impacts to all ESA- and CESA-listed plants. This may include flagging all plants and/or perimeter of populations; no-work buffers around plants and/or populations (e.g., flagged perimeter plus 50 feet); restrictions on ground disturbing activities within protected areas; relocation of staging and other material piling areas away from protected areas; restrictions on herbicide use and/or type of herbicide and/or application method within 100 feet of sensitive plants; and worker education and training. 2

Mitigation Measure #4: CDFW recommends the Plan be conditioned to provide mitigation ratios depending on the sensitivity of the species. This should be for the number of plants replaced to number impacted, including acres of habitat created to acres of habitat impacted. Rare plants are habitat specialists that require specific conditions to persist such as vegetation composition (species abundance, diversity, cover), soils, substrate, slope, hydrology, and pollinators.

Mitigation Measure #5: The Plan should provide species-specific measures for on-site mitigation. Each species-specific mitigation plan should adopt an ecosystem-based approach and be of sufficient detail and resolution to describe the following at a minimum: 1) identify the impact and level of impact (e.g., acres or individual plants/habitat impacted); 2) location of on-site mitigation and adequacy of the location(s) to serve as mitigation; 3) assessment of appropriate reference sites; 4) scientific [Genus and species (subspecies/variety if applicable)] of plants being used for restoration; 5) location(s) of propagule source; 6) species-specific planting methods (i.e., container or seed); 7) measurable goals and success criteria for establishing self-sustaining populations (e.g. percent survival rate, absolute cover); 8) long-term monitoring, and; 9) adaptive management techniques.

Recommendation #1: CDFW recommends the City perform a Regional Landscape Interconnectivity Assessment and incorporate the findings into the Plan to avoid habitat fragmentation.

Comment #2: Mitigation for Sensitive Vegetation Communities

Issue: Mitigation ratios for ranked sensitive vegetation communities provided in the DEIR are too low for the proposed Project impacts. 3

Specific Impacts: Replacement ratios of 1:1 and 2:1 are more appropriate for temporary project impacts, permanent impacts dictate higher mitigation ratios. The vegetation communities found within the Project footprint and the surrounding area provide important foraging and nesting areas for a variety of special status species. Development of the area and thinning of

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vegetation for fuel modification will result in the loss of these resources. Rare plants within 1,000 meters from these activities are considered impacted.

Why impacts would occur: CDFW considers plant communities, alliances, and associations with a statewide ranking of S1, S2, S3, and S4 as sensitive and declining at the local and regional level (Sawyer et al. 2008). An S3 ranking indicates there are 21-80 occurrences of this community in existence in California, S2 has 6-20 occurrences, and S1 has less than 6 occurrences. The Projects may have direct or indirect effects to these sensitive species.

The following ranked vegetation classifications are found within the project footprint: California sagebrush-deerweed scrub (*Artemisia californica-Acmispon glaber/Lotus scoparius* shrubland alliance, S5); cactus scrub (*Cylidropuntia prolifera* shrubland alliance, S3); blue elderberry stands (*Baccharis salicifolia* shrubland alliance, S4) and chaparral yucca scrub (*Hazardia squarrosa* shrubland alliance, S3). The DEIR states a combined 48.32 acres of these sensitive vegetation communities would be permanently impacted due to construction and development.

Project implementation includes grading, vegetation clearing, trail/road construction, soil compaction, utilities construction, road maintenance, and other activities that may result in direct mortality, population declines, or local extirpation of vegetation communities. These communities offer habitat and resources to a multitude of species, including specially listed species.

Evidence impacts would be significant: Impacts to special-status plant species should be considered significant under CEQA unless they are clearly mitigated below a level of significance. Inadequate avoidance, minimization, and mitigation measures for impacts to these sensitive plant species will result in a Project(s) continuing to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS. 3

Pursuant under CEQA Guidelines, section 15125(c), CDFW considers southern California coastal sage scrub habitats as locally significant. The absence of mitigation for many of the habitats listed above will result in significant loss of viable and valuable habitat. As a result, the Project may continue to have a significant change on the environment absent appropriate mitigation for the unavoidable direct and indirect, permanent or temporal losses, of native and undisturbed vegetation and habitat (CEQA Guidelines, § 15382). Collectively, Upland Scrub and Grassland habitats currently support or provide suitable habitat for plants and wildlife, including a rare plant and wildlife, including California Species of Special Concern (SSC). Inadequate or lack of avoidance, minimization, and mitigation measures for impacts to special status plant and wildlife species and sensitive vegetation communities will result in the Project continuing to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and the USFWS.

Mitigation Measure #1: CDFW commends the efforts of the City/Applicant to properly categorize vegetation, however some terminology used within the DEIR may be dated. Categorizations such as “blue elderberry stands, cactus scrub,” and so forth do not adequately describe vegetation to determine uniqueness, rareness, value in the landscape, or base

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restoration planting appropriateness. These terms are used in the 2009 printed version of the *Manual of California Vegetation* (MCV), which has since been updated and reformatted. In 2007, the State Legislature required CDFW to develop and maintain a vegetation mapping standard for the state (Fish & Game Code, § 1940). This standard complies with the National Vegetation Classification System, which utilizes alliance and association-based classification of unique vegetation stands. CDFW utilizes vegetation descriptions found in the MCV, found online at http://vegetation.cnps.org/. To determine the rarity ranking of vegetation communities on a specific Project site(s), the MCV alliance/association community names should be provided as CDFW only tracks rare natural communities using this classification system.

Mitigation Measure #2: CDFW recommends avoiding any sensitive natural communities found on the Project. If avoidance is not feasible, the Project proponent should mitigate at a ratio sufficient to achieve a no-net loss for impacts to special status plant species and their associated habitat. CDFW recommends all impacts to the S3 sensitive vegetation communities (cactus scrub, chaparral yucca scrub Association) (2.19-acres) should be mitigated at a 4:1 ratio and impacts to the S4 and S5 communities (CA sagebrush-deerweed scrub and blue elderberry stands) (46.13-acres) be mitigated at a 2:1 ratio.

All revegetation/restoration areas that will serve as mitigation should include preparation of a restoration plan, to be approved by CDFW prior to any ground disturbance. The restoration plan should include restoration and monitoring methods; annual success criteria; contingency actions should success criteria not be met; long-term management and maintenance goals; and a funding mechanism for long-term management. Areas proposed as mitigation should have a recorded conservation easement and be dedicated to an entity which has been approved to hold/manage lands (AB 1094; Government Code, §§ 65965-65968).

3

Mitigation Measure #3: Success criteria should be based on the specific composition of the vegetation communities being impacted. Success should not be determined until the site has been irrigation-free for at least 5 years and the metrics for success have remained stable (no negative trend for richness/diversity/abundance/cover and no positive trend for invasive/non-native cover for each vegetation layer) for at least 5 years. In the revegetation plan, the success criteria should be compared against an appropriate reference site, with the same vegetation alliance, with as good or better-quality habitat. The success criteria should include percent cover (both basal and vegetative), species diversity, density, abundance, and any other measures of success deemed appropriate by CDFW. Success criteria should be separated into vegetative layers (tree, shrub, grass, and forb) for each alliance being mitigated, and each layer should be compared to the success criteria of the reference site, as well as the alliance criteria in MCV ensuring one species or layer does not disproportionally dominate a site but conditions mimic the reference site and meets the alliance membership requirements.

CDFW does not recommend topsoil salvage or transplantation as viable mitigation options. Several studies have documented topsoil salvage had no effect on the recolonization of the target plant species (Hinshaw 1998). Based on the scientific literature available, relying on topsoil salvage alone to mitigate impacts to CEQA-rare plant species does not appear to provide any value to mitigate impacts to the plant.

Recommendation #1: CDFW recommends taking an inter-disciplinary approach, inclusive of wildlife biologists and restoration professionals, to restore scrub and grassland habitats. The

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City should replace acreage of Mediterranean Scrub and Grassland, Warm Semi-Desert Scrub and Grassland, and Coastal Bluff Scrub at no less than the total acres impacted and use only native grasses or forbs indigenous to grasslands in region/watershed. Restoration should consider habitat requirements (e.g., refugia, structure, variation in plant density and cover) of wildlife that could occur in these two vegetation communities. CDFW recommends that the location of the mitigation site avoid the conversion of other habitats (e.g., scrubland to grassland). Scrub and grassland restoration should occur in areas appropriate abiotic and biotic conditions to support each habitat type. 3

Comment #3: Crotch's Bumble Bee (*Bombus crotchii*)

Issue: The Project may impact Crotch's bumble bee (*Bombus crotchii*) (an invertebrate of conservation and an SSC) through the removal of California sage brush communities. No mention of surveys or mitigation measures were included within the DEIR.

Specific impacts: Crotch's bumble bees are generalist foragers and have been reported visiting a wide variety of flowering plants (Biesmeijer et al. 2006; Xerces 2018). They are known to occur in laurel sumac scrub, grassland, meadows, and coastal sage scrub, among other vegetation communities. The Project as proposed would develop approximately 270 acres, of which 48.32 acres are comprised of ranked California native vegetation communities and grasslands including California sagebrush-deer weed scrub, cactus scrub, and chaparral yucca scrub.

Why impacts would occur: Project as proposed would grade and/or develop habitat that could support Crotch's bumble bee. The Project may result in temporal or permanent loss of suitable nesting and foraging habitat for Crotch's bumble bee. Crotch's bumble bees are generalist foragers and have been reported visiting a wide variety of flowering plants (Biesmeijer et al. 2006; Xerces 2018). They are known to occur in laurel sumac scrub, grassland, meadows, and coastal sage scrub, among other vegetation communities. The Project ground-disturbing activities and vegetation removal may cause death or injury of adults, eggs, and larva, burrow collapse, nest abandonment, and reduced nest success. Suitable Crotch's bumble bee habitat includes areas of grasslands and scrub that contain requisite habitat elements, such as small mammal burrows. Crotch's bumble bee primarily nest in late February through late October underground in abandoned small mammal burrows but may also nest under perennial bunch grasses or thatched annual grasses, under-brush piles, in old bird nests, and in dead trees or hollow logs (Williams et al. 2014; Hatfield et al. 2018). Overwintering sites utilized by Crotch's bumble bee mated queens include soft, disturbed soil (Goulson 2010), or under leaf litter or other debris (Williams et al. 2014). Despite the presence of suitable Crotch's bumble bee habitat on site, the DEIR does not provide information as to what criteria would be used to conclude that the species is not present. Without adequate presence/absence surveys, ground disturbance and vegetation removal associated with Project implementation during the breeding season could result in the incidental loss of breeding success or otherwise lead to nest abandonment in areas adjacent to the Project site. Project activities may result in temporal or permanent loss of colonies, and suitable nesting and foraging habitat. 4

Evidence impact would be significant: Crotch's bumble bee is listed as an invertebrate of conservation priority under the California Terrestrial and Vernal Pool Invertebrates of Conservation Priority (CDFWb 2017). Crotch's bumble bee has a State ranking of S1/S2. This

means that the Crotch's bumble bee is considered critically imperiled or imperiled and is extremely rare (often 5 or fewer populations). Also, Crotch's bumble bee has a very restricted range and steep population declines make the species vulnerable to extirpation from the State (CDFWb 2017). Accordingly, Crotch's bumble bee meets the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines, § 15380). Therefore, take of Crotch's bumble bee could require a mandatory finding of significance by the City (CEQA Guidelines, § 15065).

Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure #1: CDFW recommends that measures be taken, primarily, to avoid Project impacts to Crotch's bumble bee. Surveys should be performed by a qualified entomologist familiar with the species behavior and life history to determine the presence/absence of Crotch's bumble bee and within one year prior to vegetation removal and/or grading. Surveys should be conducted during flying season when the species is most likely to be detected above ground, between March 1 to September 1 (Thorp et al. 1983). Survey results, including negative findings, should be submitted to CDFW prior to implementing Project-related ground-disturbing activities. At minimum, a survey report should provide the following:

a) A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch's bumble bee. CDFW recommends the map show surveyor(s) track lines to document that the entire site was covered during field surveys.
b) Field survey conditions that should include name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched.
c) Map(s) showing the location of nests/colonies.
d) A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found. A sufficient description of biological conditions, primarily impacted habitat, should include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species).

4

Mitigation Measure #2: If "take" or adverse impacts to Crotch's bumble bee cannot be avoided either during Project activities or over the life of the Project, the City should consult CDFW to determine appropriate avoidance and/or minimization measures for the species.

Recommendation #1: CDFW recommends the City update their CEQA document to reflect the possibility of Crotch's bumble bee within the Project site and discuss the local and regional significance of impacts to the species. Focus surveys should be conducted in order to determine presence/absence, identify potential nest sites, and to further evaluate the quality of habitat present for Crotch's bumble bee. The updated analysis should include appropriate avoidance, minimization, and compensatory mitigation measures to offset any impacts to below a level of significance.

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Comment #4: Monarch Butterfly

Issue: Project(s) activities have the potential to impact overwintering monarch butterflies (*Danaus plexippus*), which is an Endangered Species Act (ESA) candidate listed species and has been documented to occur in throughout the region (CDFWc 2021).

Specific impact: Without appropriate avoidance and minimization measures for monarch butterflies, potential significant impacts associated with tree trimming, vegetation removal, and ground disturbance activities could occur. Potential impacts include roost destruction, inadvertent entrapment, reduced reproductive success, reduction in health and vigor of eggs and/or larvae, and direct mortality of individual monarchs.

Why impacts would occur: Project(s) activities have the potential to impact monarch butterflies, which have been documented to occur in the region. Protocol surveys are necessary to identify the presence of monarch butterflies and supporting habitat necessary for their survival. A lack of protocol surveys will likely result in avoidable, direct and/or indirect impacts to monarch butterflies. During the last decade, overwintering monarch populations have decline by nearly 90-percent (Jepsen et al 2015). Habitat loss and fragmentation is among the primary threats to the population (USFWS 2020). Ground clearing and construction activities could exacerbate this issue and lead to the direct mortality of monarch butterflies. Habitat loss could lead to a loss of foraging potential, nesting sites, or refugia and would constitute a significant impact absent appropriate mitigation. 5

Evidence impact would be significant: CDFW considers impacts to rare species a significant direct and cumulative adverse effect without implementing appropriate avoidance and/or mitigation measures. Project(s) activities have the potential to significantly impact the species by reducing possible roosting habitat.

Recommended Potentially Feasible Mitigation Measure(s):

Mitigation Measure #1: CDFW recommends that a qualified biologist conduct a habitat assessment, within 30 days of Project(s) implementation, to determine if the Project(s) area or its immediate vicinity contain habitat suitable to support monarchs.

Mitigation Measure #2: If suitable habitat is present, CDFW recommends assessing presence of monarchs by conducting protocol surveys consistent with USFWS recommendations (see https://xerces.org/publications/planning-management/western-monarch-butterfly-conservation-recommendations).

Mitigation Measure #3: If monarch butterflies are detected within or in the vicinity of Project(s) areas, The City will consult CDFW and USFWS, prior to Project(s) implementation to discuss how to implement ground-disturbing activities and avoid take.

Comment #5: Lake and Streambed Agreement (LSA)

Issue: CDFW is concerned with impacts to streams near the Project site. CDFW is also concerned that some drainage features in the northern portion of the site may have been missed during delineation surveys in 2019 and 2021. 6

Specific Impact: The Project as presented has multiple jurisdictional waters along its borders. Most notably is its proximity to the Walnut Canyon channel, a concrete-lined channel that drains into Arroyo Las Posas Creek. The proposed Project may diminish on-site and downstream water quality, alter the hydrologic and geomorphic processes, and impact specially listed downstream fish.

Additionally, within the appendices of the DEIR it states, "In the northeastern portion of the site, storm water flows, partially originating from the southern terminus of Meridian Hills Drive, have eroded a gully into the slopes [an] additional soil erosion of the gully was observed from recent rainfalls [in 2018]…[h]owever, the presence of hydric soils in both, and the presence of a defined bed and bank in the eastern drainage suggest the CDFW would take jurisdiction over each." However, within the provided DEIR the jurisdictional status was never definitively confirmed for this feature ("Erosional Feature 1"). CDFW would like confirmation that this feature does not fall within State jurisdiction.

Why impacts would occur: Run-off from the project site could introduce higher levels of pollutants to downstream water bodies and potentially result in the degradation of water quality and riparian habitat. Debris, soil, silt, sawdust, rubbish, raw cement/concrete, or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous or deleterious to aquatic life, wildlife, or riparian habitat resulting from Project related activities may enter the stream. Construction activities and development may also result in changes to the streams, altering hydrologic and geomorphic processes that may impact plant and wildlife species. Project activities may also cause direct and/or indirect impacts to the bed, bank, or channel of the stream may occur. Project impacts may result in the loss of streams and associated watershed function and biological diversity. 6

It is also unclear if all drainage features have been appropriately defined such as "Erosional Feature 1" and other drainage features in the northern portion of the Project site. Therefore, appropriate avoidance, minimization, and mitigations have not been determined. Inadequate investigation may result in the Project continuing to have a substantial adverse direct and cumulative effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW.

Evidence impact would be significant: Fish and Game Code section 1602 requires any person, State or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following: Divert or obstruct the natural flow of any river, stream, or lake; Change the bed, channel, or bank of any river, stream, or lake; Use material from any river, stream, or lake; or, Deposit or dispose of material into any river, stream, or lake. Additionally, CDFW considers most natural drainages to be streambeds unless it is demonstrated otherwise. The Project may substantially adversely affect existing stream patterns, which absent specific mitigation, could result in substantial erosion or siltation on site or off site of the Project. In addition, impacts to biological resources off site, such as Calleguas Creek and the Mugu Lagoon, may occur.

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Recommended potentially feasible mitigation measure(s):

Mitigation Measure #1: The Project applicant (or "entity") must provide written notification to CDFW pursuant to section 1600 *et seq.* of the Fish and Game Code. Based on this notification and other information, CDFW shall determine whether a Lake and Streambed Alteration (LSA) Agreement is required prior to conducting the proposed activities. A notification package for a LSA may be obtained by accessing CDFW's web site at https://www.wildlife.ca.gov/conservation/lsa.

If necessary, CDFW's issuance of an LSA Agreement for a Project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document of the Lead Agency for the Project. To minimize additional requirements by CDFW pursuant to section 1600 *et seq.* and/or under CEQA, the CEQA document should fully identify the potential impacts to streams or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement. 6

Mitigation Measure #2: Any LSA Agreement issued for the Project by CDFW may include additional measures protective of streambeds on and downstream of the Project such as additional erosion and pollution control measures. To compensate for any on-site and off-site impacts to riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: avoidance of resources, on-site or off-site creation, enhancement, or restoration, and/or protection and management of mitigation lands in perpetuity.

Mitigation Measure #3: Jurisdiction surveys should evaluate all rivers, streams, and lakes including culverts, ditches, and storm channels that may transport water, sediment, and pollutants that discharge into rivers, streams, and lakes. CDFW would like confirmation that "Erosional Feature 1" does not fall within State jurisdiction as well as the other drainage features along the northern border of the site.

Recommendation 1: CDFW recommends disclosing any vernal pools found within the project footprint and the surrounding area to assess potential impacts and recommend meaningful mitigation. Vernal pools offer habitat to several specially listed species and are afforded protections pursuant to CEQA. CDFW recommends avoidance of vernal pools, if avoidance is not possible preservation of existing vernal pool complexes should be mitigated at appropriate ratios. If not feasible, restoration and preservation of damaged pools and associated upland habitat that support vernal pools should be mitigated to an appropriate ratio. CDFW does not recommend or support the creation of vernal pools.

Comment #6: Spreading Invasive Pests and Diseases

Issue: CDFW is concerned that the DEIR does not describe procedures for disposal of removed trees which may be infested with invasive pests and disease. For example, the environmental document should address the presence or absence of goldspotted oak borer (*Agrilus auroguttatus*), Polyphagus shot-hole borer (*Euwallacea* sp.), and thousand canker fungus (*Geosmithia morbida*) in on-site trees and, if present, describe how any effected trees would be disposed of as part of the Project. 7

Specific impacts: Improper disposal of vegetation may result in the spread of tree insect pests and disease into areas not currently exposed to these stressors. This could result in expediting the loss of oaks and other trees in California which support a high biological diversity including special status species.

Why impacts would occur: The Project may remove tree species that could host insect pests and diseases. Trees will be removed and presumably hauled to off-site locations for disposal thereby potentially exposing off-site oak and other tree species to infestation and disease.

Evidence impact would be significant: The Project may have a substantial adverse effect on any sensitive natural communities identified in local or regional plans, policies, and regulations or by the CDFW or USFWS. The Project may result in a substantial adverse effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS that are dependent on habitats susceptible to insect and disease pathogens. 7

Mitigation Measure #1: CDFW recommends the City work with the certified arborist to identify all trees and species for removal from the Project site and inspect those trees for contagious tree diseases including but not limited to: thousand canker fungus (https://thousandcankers.com/), Polyphagous shot hole borer (https://ucanr.edu/sites/eskalenlab/?file=index.html), and goldspotted oak borer (http://ipm.ucanr.edu/PMG/PESTNOTES/pn74163.html). A summary report documenting inspection methods, number and species of trees inspected, results, and conclusions, including negative findings, should be submitted to CDFW for review and included as an appendix in final environmental documents. The summary report should also include photographic documentation of entry/exit holes and evidence of pests/disease.

Mitigation Measure #2: If invasive pests and/or diseases are detected, the City should provide an infectious tree disease management plan and describe how it will be implemented to avoid significant impacts under CEQA. To avoid the spread of infectious tree diseases, diseased trees should not be transported from the Project site without first being treated using best available management practices relevant for each tree disease observed. A management plan should be submitted to CDFW for review and included as an appendix in the final environmental document.

Comment #7: Impacts to Non-Game Mammals and Wildlife

Issue: Wildlife may still move through the Project site during the daytime or nighttime. CDFW is concerned that any wildlife potentially moving through or seeking temporary refuge on the Project site may be directly impacted during Project activities and construction. Any final fence, or other design features, design should allow for wildlife movement.

Specific impacts: Project activities and construction equipment may directly impact wildlife and birds moving through or seeking temporary refuge on site. This could result in wildlife and bird mortality. Furthermore, depending on the final fencing design, the Project may cumulatively restrict wildlife movement opportunity. 8

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Why impacts would occur: Direct impacts to wildlife may occur from: ground disturbing activities (e.g., staging, access, excavation, grading); wildlife being trapped or entangled in construction materials and erection of restrictive fencing; and wildlife could be trampled by heavy equipment operating in the Project site.

Evidence impact would be significant: Mammals occurring naturally in California are considered non-game mammals and are afforded protection by State law from take and/or harassment (Fish & Game Code, § 4150; Cal. Code of Regs, § 251.1).

Recommended Potentially Feasible Mitigation Measure(s): CDFW recommends the following four mitigation measures to avoid and minimize direct impacts to wildlife during Project construction and activities.

Mitigation Measure #1: If fencing is proposed for use during construction or during the life of the Project, fences should be constructed with materials that are not harmful to wildlife. Prohibited materials include, but are not limited to, spikes, glass, razor, or barbed wire. Fencing should also be minimized so as not to restrict free wildlife movement through habitat areas.

Mitigation Measure #2: To avoid direct mortality, a qualified biological monitor should be on site prior to and during ground and habitat disturbing activities to move out of harm's way special status species or other wildlife of low mobility that would be injured or killed by grubbing or Project-related construction activities. Salvaged wildlife of low mobility should be removed and placed onto adjacent and suitable (i.e., species appropriate) habitat out of harm's way. 8

It should be noted that the temporary relocation of on-site wildlife does not constitute effective mitigation for the purposes of offsetting Program impacts associated with habitat loss.

Mitigation Measure #3: Grubbing and grading should be done to avoid islands of habitat where wildlife may take refuge and later be killed by heavy equipment. Grubbing and grading should be done from the center of the Project site, working outward towards adjacent habitat off site where wildlife may safely escape.

Additional Recommendations

Alternatives. CDFW recommends the City consider an alternative that would fully avoid or minimize impacts to streams, sensitive plants and wildlife. CDFW recommends the City recirculate the environmental document after including alternative locations in order to foster meaningful public participation and informed decision making [CEQA Guidelines, §§ 15088.5, 15126.6(f)]. If the City concludes that no feasible alternative locations exist, or the use of alternative locations as a mitigation measures is infeasible, the City must disclose the reasons in the final environmental document and recirculate [CEQA Guidelines, §§ 15088.5(a)(3), 15126.6(f)(2)]. 9

Fuel Modification. If the Project includes fuel modification, CDFW recommends that the final environmental include avoidance and mitigation measures for any fuel modification activities conducted within and adjacent to the Project area. A weed management plan should be developed for all areas adjacent to open space that will be subject to fuel modification disturbance. CDFW also recommends that any irrigation proposed in fuel modification zones drain back into the development and not onto natural habitat land as perennial sources of water 10

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allow for the introduction of invasive Argentine ants. 10

Mitigation and Monitoring Reporting Plan. Per Public Resources Code section 21081.6(a)(1), CDFW has provided the City with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A). A final MMRP should reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.

Filing Fees

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the County and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required for the underlying Project approval to be operative, vested, and final (Cal. Code Regs., tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089). 11

Conclusion

We appreciate the opportunity to comment on the Project to assist the City in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that the City has to our comments and to receive notification of any forthcoming hearing date(s) for the Project [CEQA Guidelines, § 15073(e)]. If you have any questions or comments regarding this letter, please contact Angela Castanon, Environmental Scientist, at Angela.Castanon@wildlife.ca.gov.

Sincerely,

DocuSigned by:
B6E58CFE24724F5...

Erinn Wilson-Olgin
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CHARLTON H. BONHAM, Director

Attachment A: Draft Mitigation and Monitoring Reporting Plan

CDFW recommends the following language to be incorporated into a future environmental document for the Project. A final MMRP should reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.

Biological Resources (BIO)			
Mitigation Measure (MM) or Recommendation (REC)		**Timing**	**Responsible Party**
MM-BIO-1-Impacts Rare Plants	CDFW recommends including avoidance, minimization, and/or mitigation measure language articulating the need to perform focused surveys for sensitive/rare plants on-site and disclosing the results prior to the implementation of Projects. Based on the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFWa 2018) (https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959), a qualified biologist should "conduct surveys in the field at the time of year when species are both evident and identifiable. Usually this is during flowering or fruiting." Final CEQA documentation, for a specified Project(s), should provide a thorough discussion on the presence/absence of sensitive plants on-site and identify measures to protect sensitive plant communities from Project-related direct and indirect impacts.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-2-Impacts Rare Plants	If rare or sensitive plants are found on or near the footprint of the Project, CDFW recommends the DEIR provide measures to fully mitigate the loss of individual ESA- and CESA-listed plants and habitat. The DEIR should provide a map showing which plants or populations will be impacted and provide a table that clearly documents the number of plants and acres of supporting habitat	Prior to Project construction and activities	City of Moorpark/ Applicant

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	impacted, and plant composition (e.g., density, cover, abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, abundance of each species).		
MM-BIO-3-Impacts Rare Plants	If rare or sensitive plants are found on or near the footprint of the Project, the DEIR should provide species-specific measures to fully avoid impacts to all ESA- and CESA-listed plants. This may include flagging all plants and/or perimeter of populations; no-work buffers around plants and/or populations (e.g., flagged perimeter plus 50 feet); restrictions on ground disturbing activities within protected areas; relocation of staging and other material piling areas away from protected areas; restrictions on herbicide use and/or type of herbicide and/or application method within 100 feet of sensitive plants; and worker education and training.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-4-Impacts Rare Plants	CDFW recommends the Plan be conditioned to provide mitigation ratios depending on the sensitivity of the species. This should be for the number of plants replaced to number impacted, including acres of habitat created to acres of habitat impacted. Rare plants are habitat specialists that require specific conditions to persist such as vegetation composition (species abundance, diversity, cover), soils, substrate, slope, hydrology, and pollinators.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-5-Impacts Rare Plants	The Plan should provide species-specific measures for on-site mitigation. Each species-specific mitigation plan should adopt an ecosystem-based approach and be of sufficient detail and resolution to describe the following at a minimum: 1) identify the impact and level of impact (e.g., acres or individual plants/habitat impacted); 2) location of on-site mitigation and adequacy of the location(s) to serve as mitigation; 3) assessment of appropriate reference sites; 4) scientific [Genus and species (subspecies/variety if applicable)] of plants being used for restoration; 5) location(s) of propagule source; 6) species-specific planting methods (i.e., container or seed); 7) measurable goals and success criteria for establishing self-sustaining populations	Prior to Project construction and activities	City of Moorpark/ Applicant

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	(e.g. percent survival rate, absolute cover); 8) long-term monitoring, and; 9) adaptive management techniques.		
MM-BIO-6- Impacts to Sensitive Plant Communities	CDFW commends the efforts of the City/Applicant to properly categorize vegetation, however some terminology used within the DEIR may be dated. Categorizations such as "blue elderberry stands, cactus scrub," and so forth do not adequately describe vegetation to determine uniqueness, rareness, value in the landscape, or base restoration planting appropriateness. These terms are used in the 2009 printed version of the *Manual of California Vegetation* (MCV), which has since been updated and reformatted. In 2007, the State Legislature required CDFW to develop and maintain a vegetation mapping standard for the state (Fish & Game Code, § 1940). This standard complies with the National Vegetation Classification System, which utilizes alliance and association-based classification of unique vegetation stands. CDFW utilizes vegetation descriptions found in the MCV, found online at http://vegetation.cnps.org/. To determine the rarity ranking of vegetation communities on a specific Project site(s), the MCV alliance/association community names should be provided as CDFW only tracks rare natural communities using this classification system.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-7- Impacts to Sensitive Plant Communities	CDFW recommends avoiding any sensitive natural communities found on the Project. If avoidance is not feasible, the Project proponent should mitigate at a ratio sufficient to achieve a no-net loss for impacts to special status plant species and their associated habitat. CDFW recommends all impacts to the S3 sensitive vegetation communities (cactus scrub, chaparral yucca scrub Association) (2.19-acres) should be mitigated at a 4:1 ratio and impacts to the S4 and S5 communities (CA sagebrush-deerweed scrub and blue elderberry stands) (46.13-acres) be mitigated at a 2:1 ratio.	Prior to Project construction and activities	City of Moorpark/ Applicant

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	All revegetation/restoration areas that will serve as mitigation should include preparation of a restoration plan, to be approved by CDFW prior to any ground disturbance. The restoration plan should include restoration and monitoring methods; annual success criteria; contingency actions should success criteria not be met; long-term management and maintenance goals; and a funding mechanism for long-term management. Areas proposed as mitigation should have a recorded conservation easement and be dedicated to an entity which has been approved to hold/manage lands (AB 1094; Government Code, §§ 65965-65968).		
MM-BIO-8- Impacts to Sensitive Plant Communities	Success criteria should be based on the specific composition of the vegetation communities being impacted. Success should not be determined until the site has been irrigation-free for at least 5 years and the metrics for success have remained stable (no negative trend for richness/diversity/abundance/cover and no positive trend for invasive/non-native cover for each vegetation layer) for at least 5 years. In the revegetation plan, the success criteria should be compared against an appropriate reference site, with the same vegetation alliance, with as good or better-quality habitat. The success criteria should include percent cover (both basal and vegetative), species diversity, density, abundance, and any other measures of success deemed appropriate by CDFW. Success criteria should be separated into vegetative layers (tree, shrub, grass, and forb) for each alliance being mitigated, and each layer should be compared to the success criteria of the reference site, as well as the alliance criteria in MCV2, ensuring one species or layer does not disproportionally dominate a site but conditions mimic the reference site and meets the alliance membership requirements. CDFW does not recommend topsoil salvage or transplantation as viable mitigation options. Several studies have documented topsoil salvage had no effect on the recolonization of the target plant species (Hinshaw 1998). Based on the scientific literature	Prior to /During/ After Project construction and activities	City of Moorpark/ Applicant

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	available, relying on topsoil salvage alone to mitigate impacts to CEQA-rare plant species does not appear to provide any value to mitigate impacts to the plant.		
MM-BIO-9-Impacts to Crotch's Bumble Bee	CDFW recommends that measures be taken, primarily, to avoid Project impacts to Crotch's bumble bee. Surveys should be performed by a qualified entomologist familiar with the species behavior and life history to determine the presence/absence of Crotch's bumble bee and within one year prior to vegetation removal and/or grading. Surveys should be conducted during flying season when the species is most likely to be detected above ground, between March 1 to September 1 (Thorp et al. 1983). Survey results, including negative findings, should be submitted to CDFW prior to implementing Project-related ground-disturbing activities. At minimum, a survey report should provide the following: 1. A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch's bumble bee. CDFW recommends the map show surveyor(s) track lines to document that the entire site was covered during field surveys. 2. Field survey conditions that should include name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched. 3. Map(s) showing the location of nests/colonies. 4. A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found. A sufficient description of biological conditions, primarily impacted habitat, should include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by	Prior to Project construction and activities	City of Moorpark/ Applicant

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	vegetation class; density, cover, and abundance of each species).		
MM-BIO-10- Impacts to Crotch's Bumble Bee	If "take" or adverse impacts to Crotch's bumble bee cannot be avoided either during Project activities or over the life of the Project, the City should consult CDFW to determine appropriate avoidance and/or minimization measures for the species.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-11- Impacts to Monarch Butterfly	CDFW recommends that a qualified biologist conduct a habitat assessment, within 30 days of Project(s) implementation, to determine if the Project(s) area or its immediate vicinity contain habitat suitable to support monarchs.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-12- Impacts to Monarch Butterfly	If suitable habitat is present, CDFW recommends assessing presence of monarchs by conducting protocol surveys consistent with USFWS recommendations (see https://xerces.org/publications/planning-management/western-monarch-butterfly-conservation-recommendations).	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-13- Impacts to Monarch Butterfly	If monarch butterflies are detected within or in the vicinity of Project(s) areas, The City will consult CDFW and USFWS, prior to Project(s) implementation to discuss how to implement ground-disturbing activities and avoid take.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-14- Lake and Stream Bed Alteration Agreement	The Project applicant (or "entity") must provide written notification to CDFW pursuant to section 1600 *et seq.* of the Fish and Game Code. Based on this notification and other information, CDFW shall determine whether a Lake and Streambed Alteration (LSA) Agreement is required prior to conducting the proposed activities. A notification package for a LSA may be obtained by accessing CDFW's web site at https://www.wildlife.ca.gov/conservation/lsa. If necessary, CDFW's issuance of an LSA Agreement for a Project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document of the Lead Agency for	Prior to Project construction and activities	City of Moorpark/ Applicant

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	the Project. To minimize additional requirements by CDFW pursuant to section 1600 *et seq.* and/or under CEQA, the CEQA document should fully identify the potential impacts to streams or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement.		
MM-BIO-15-Lake and Stream Bed Alteration Agreement	Any LSA Agreement issued for the Project by CDFW may include additional measures protective of streambeds on and downstream of the Project such as additional erosion and pollution control measures. To compensate for any on-site and off-site impacts to riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: avoidance of resources, on-site or off-site creation, enhancement, or restoration, and/or protection and management of mitigation lands in perpetuity.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-16-Lake and Stream Bed Alteration Agreement	Jurisdiction surveys should evaluate all rivers, streams, and lakes including culverts, ditches, and storm channels that may transport water, sediment, and pollutants that discharge into rivers, streams, and lakes. CDFW would like confirmation that "Erosional Feature 1" does not fall within State jurisdiction as well as the other drainage features along the northern border of the site.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-17-Spread of Invasive Pests and Diseases	CDFW recommends the City work with the certified arborist to identify all trees and species for removal from the Project site and inspect those trees for contagious tree diseases including but not limited to: thousand canker fungus (https://thousandcankers.com/), Polyphagous shot hole borer (https://ucanr.edu/sites/eskalenlab/?file=index.html), and goldspotted oak borer (http://ipm.ucanr.edu/PMG/PESTNOTES/pn74163.html). A summary report documenting inspection methods, number and species of trees inspected, results, and conclusions, including negative findings, should be submitted to CDFW for review and included as an appendix in final environmental documents. The summary report should also include photographic documentation of entry/exit holes and evidence of pests/disease.	Prior to Project construction and activities	City of Moorpark/ Applicant

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MM-BIO-18-Spread of Invasive Pests and Diseases	If invasive pests and/or diseases are detected, the City should provide an infectious tree disease management plan and describe how it will be implemented to avoid significant impacts under CEQA. To avoid the spread of infectious tree diseases, diseased trees should not be transported from the Project site without first being treated using best available management practices relevant for each tree disease observed. A management plan should be submitted to CDFW for review and included as an appendix in the final environmental document.	Prior to/During/ After Project construction and activities	City of Moorpark/ Applicant
MM-BIO-19-Impacts to Non-Game Mammals and Wildlife	If fencing is proposed for use during construction or during the life of the Project, fences should be constructed with materials that are not harmful to wildlife. Prohibited materials include, but are not limited to, spikes, glass, razor, or barbed wire. Fencing should also be minimized so as not to restrict free wildlife movement through habitat areas.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-20-Impacts to Non-Game Mammals and Wildlife	To avoid direct mortality, a qualified biological monitor should be on site prior to and during ground and habitat disturbing activities to move out of harm's way special status species or other wildlife of low mobility that would be injured or killed by grubbing or Project-related construction activities. Salvaged wildlife of low mobility should be removed and placed onto adjacent and suitable (i.e., species appropriate) habitat out of harm's way. It should be noted that the temporary relocation of on-site wildlife does not constitute effective mitigation for the purposes of offsetting Program impacts associated with habitat loss.	Prior to Project construction and activities	City of Moorpark/ Applicant
MM-BIO-21-Impacts to Non-Game Mammals and Wildlife	Grubbing and grading should be done to avoid islands of habitat where wildlife may take refuge and later be killed by heavy equipment. Grubbing and grading should be done from the center of the Project site, working outward towards adjacent habitat off site where wildlife may safely escape.	Prior to/During construction and activities	City of Moorpark/ Applicant

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REC-1- Plant impacts	CDFW recommends the City perform a Regional Landscape Interconnectivity Assessment and incorporate the findings into the Plan to avoid habitat fragmentation.	Prior to Project construction and activities	City of Moorpark/ Applicant
REC-2- Vegetation Mitigation and Restoration	CDFW recommends taking an inter-disciplinary approach, inclusive of wildlife biologists and restoration professionals, to restore scrub and grassland habitats. The City should replace acreage of Mediterranean Scrub and Grassland, Warm Semi-Desert Scrub and Grassland, and Coastal Bluff Scrub at no less than the total acres impacted and use only native grasses or forbs indigenous to grasslands in region/watershed. Restoration should consider habitat requirements (e.g., refugia, structure, variation in plant density and cover) of wildlife that could occur in these two vegetation communities. CDFW recommends that the location of the mitigation site avoid the conversion of other habitats (e.g., scrubland to grassland). Scrub and grassland restoration should occur in areas appropriate abiotic and biotic conditions to support each habitat type.	During Project construction and activities	City of Moorpark/ Applicant
REC-3- Crotch's Bumble Bee	CDFW recommends the City update their CEQA document to reflect the possibility of Crotch's bumble bee within the Project site and discuss the local and regional significance of impacts to the species. Focus surveys should be conducted in order to determine presence/absence, identify potential nest sites, and to further evaluate the quality of habitat present for Crotch's bumble bee. The updated analysis should include appropriate avoidance, minimization, and compensatory mitigation measures to offset any impacts to below a level of significance.	During construction and activities	City of Moorpark/ Applicant
REC-4- Vernal Pools	CDFW recommends disclosing any vernal pools found within the project footprint and the surrounding area to assess potential impacts and recommend meaningful mitigation. Vernal pools offer habitat to several specially listed species and are afforded protections pursuant to CEQA. CDFW recommends avoidance of vernal pools, if avoidance is not possible preservation of existing vernal pool complexes should be mitigated at appropriate ratios. If	Prior to Project construction and activities	City of Moorpark/ Applicant

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	not feasible, restoration and preservation of damaged pools and associated upland habitat that support vernal pools should be mitigated to an appropriate ratio. CDFW does not recommend or support the creation of vernal pools.		
REC-5- Alternatives	CDFW recommends the City consider an alternative that would fully avoid or minimize impacts to streams, sensitive plants and wildlife. CDFW recommends the City recirculate the environmental document after including alternative locations in order to foster meaningful public participation and informed decision making [CEQA Guidelines, §§ 15088.5, 15126.6(f)]. If the City concludes that no feasible alternative locations exist, or the use of alternative locations as a mitigation measures is infeasible, the City must disclose the reasons in the final environmental document and recirculate [CEQA Guidelines, §§ 15088.5(a)(3), 15126.6(f)(2)].	Prior to/During Project construction and activities	City of Moorpark/ Applicant
REC-6- Fuel Modification	If the Project includes fuel modification, CDFW recommends that the final environmental include avoidance and mitigation measures for any fuel modification activities conducted within and adjacent to the Project area. A weed management plan should be developed for all areas adjacent to open space that will be subject to fuel modification disturbance. CDFW also recommends that any irrigation proposed in fuel modification zones drain back into the development and not onto natural habitat land as perennial sources of water allow for the introduction of invasive Argentine ants.	Prior to Project construction and activities	City of Moorpark/ Applicant
REC-7- Mitigation and Monitoring Reporting Plan	Per Public Resources Code section 21081.6(a)(1), CDFW has provided the City with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A). A final MMRP should reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.	Prior to construction and activities	City of Moorpark/ Applicant

Letter A-CDFW-2 California Department of Fish and Wildlife

Response to Comment A-CDFW-2-1

Thank you for your comment. The comment does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. The comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment A-CDFW-2-2

Impacts to Special-Status Plants: As summarized in Table 3.3-2 of the DEIR, the site lacks suitable habitat or is outside of the known geographic and elevational range for most of the special-status plant species documented in the region by the California Natural Diversity Database (CNDDB). The comment identifies Lyon's pentachaeta (*Pentachaeta lyonii*), Santa Susana tarplant (*Deinandra minthornii*), Conejo dudleya (*Dudleya parva*), marcescent dudleya (*Dudleya cymosa ssp. marcescens*), Agoura Hills dudleya (*Dudleya cymosa ssp. gourensis*), Blochman's dudleya (*Dudleya blochmaniae ssp. Blochmaniae*); Verity's dudleya (*Dudleya verity*), Braunton's milk-vetch (*Astragalus brauntonii*), California Orcutt grass (*Orcuttia californica*), and Conejo buckwheat (*Eriogonum crocatum*) as species that are potentially occurring based on the CNDDB. As stated on pages 3.23-3.28, most regionally occurring rare plant species have no potential to occur on site based on the absence of suitable soils, vegetation communities, rock formations, and/or other microhabitats. Each of these species are discussed accordingly in Table 3.3-2 and their required habitat features are absent from the site. Additionally, a field visit was conducted in 2021 to further evaluate vegetation communities and habitat suitability for rare plants on the site (page 3.3-7). As documented during the field surveys and described in the DEIR (page 3.3-11), native plant communities present on site are substantially disturbed by ongoing grazing. Therefore, the quality of the habitat onsite for rare plants is considered to be extremely degraded due to this grazing regime. As described in Table 3.3-2 of the DEIR, only three rare plant species (white rabbit-tobacco, Plummer's mariposa lily, and round-leaved filaree) were identified as having low potential to occur onsite based on their distribution, presence of adequate soils, and on-site vegetation classifications. However, all three species are highly unlikely to be present due to the extremely disturbed site conditions. Furthermore, as described on page 3.3-22, special-status species with "Low Potential" to occur are not likely to be found on the Project site, because few of the habitat components meeting the species requirements are present and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. As observed during recent site assessments, the required vegetation assemblages are considered unsuitable as habitat for these species due to heavy grazing. As such, no impacts to rare plant species would occur as a result of the project, and the inclusion of additional mitigation measures is not warranted under CEQA.

Response to Comment A-CDFW-2-3

Thank you for providing reference to the updated state vegetation community naming and ranking conventions. Updates to the document are not necessary as the scientific names and rankings associated with the dominant species in each community/alliance is included in the vegetation community descriptions (page 3.3-12 - 3.3-16). As documented during the field surveys and described in the DEIR (page 3.3-11, 3.3-62-63), native plant communities present on site are substantially disturbed by ongoing grazing. Nonetheless, the Project proposes in-kind 1:1 replacement of the disturbed/grazed scrub communities that provide low quality habitat (MM BR-6). The higher quality habitats west of Gabbert Road are avoided with the exception of 2.36 acres of California sagebrush-deerweed scrub. MM BR-6 proposes a 2:1 mitigation ratio for the replacement of this more intact native habitat. The Project is required to prepare a Native Habitat Restoration Plan for the habitat mitigation area that will be reviewed and approved by CDFW prior to issuance of a grading permit. This mitigation area will be managed long-term for habitat purposes to meet agency approved performance standards and success criteria. Therefore, it will be of higher quality than the degraded habitats that are to be impacted by the project. Moreover, the lower mitigation ratio would compensate impacts to areas that have been continuously degraded by grazing activities and the quality of the impact site (even in the case of sensitive communities) would be far exceeded by the functional lift and habitat values provided by the mitigation site.

Response to Comment A-CDFW-2-4

As documented during the field surveys and described in the DEIR (page 3.3-11), native plant communities present on site are substantially disturbed by grazing. The quality of the habitat on site is considered to be extremely degraded and unlikely to support endemic species such as the Crotch's bumble bee that rely on intact, native vegetation due to the grazing regime. Crotch's bumblebee was not observed on site during field surveys. If Crotch's bumble bee is present in the vicinity of the project site, there is relatively undisturbed, intact habitat, located to the west and north of the site that would be preferred over the degraded vegetation that is onsite. Thus, the Project site is not expected to be attractive to the species for foraging and nesting. Additionally, the project will compensate for the loss of native vegetation communities as described on pages 3.3-82 and 3.3-83 of the DEIR under MM BR-6. Habitat mitigation areas will not be subject to the same disturbance levels as the Project site, providing higher quality habitats for native species than that which will be impacted by the project. Given the extremely low habitat quality and mitigation already proposed, the inclusion of additional mitigation measures for Crotch's bumblebee is not warranted under CEQA.

Response to Comment A-CDFW-2-5

Monarch butterflies are known to over-winter in blue gum (*Eucalyptus globulus*) forests in California and require the forest to be dense enough to provide wind protection from prevailing coastal winds. The

Eucalyptus trees need to be tall (at least 60 feet) because they roost in the intermediate level of the canopy where wind protection is greatest. Most of the approximately 250 monarch roosting sites recorded in California are within 2.4 kilometers (1.5 miles) of the ocean.[1] The blue gum trees on the project site are scattered among other tree species do not form a dense *Eucalyptus* Forest, and the project site is more than 16 miles from the ocean. Additionally, no monarch butterfly occurrences were identified in the California Natural Diversity Database query for the Moorpark U.S. Geological Survey (USGS) 7.5-minute quadrangle, in which the Project site is located, as well as the eight surrounding quadrangles: Thousand Oaks, Newbury Park, Santa Paula, Santa Paula Peak, Camarillo, Simi, Piru, and Fillmore. Based on the above information, the scattered *Eucalyptus* trees on the project site are not expected to provide monarch butterfly over-wintering habitat and no impacts to monarch butterfly are expected to occur.

Response to Comment A-CDFW-2-6

In accordance with the Standard Conditions and Requirements Mitigation Measure on pages 3.3-78 and 3.3-79, the Project will apply for a Section 1600 Lake and Streambed Alteration Agreement with the CDFW prior to the start of construction. This measure also requires that any additional mitigation measures set forth in the Agreement will be implemented by the Project. A delineation of CDFW jurisdictional waters will be submitted as part of the permit application package.

Response to Comment A-CDFW-2-7

As required by MM BR-10 on page 3.3-85 of the DEIR, a tree removal permit must be obtained from the City prior to the removal of trees at the site. MM BR-10 has been revised to require proper disposal methods of removed trees that are determined to be diseased or infested with insect pests. Removed trees that are determined to be diseased and/or infested with insect pests shall be chipped onsite to prevent the spread to offsite trees.

Please refer to **Section 3.0, Revisions to the Draft EIR, Section 3.3, Biological Resources**.

Response to Comment A-CDFW-2-8

As described under Wildlife Movement on pages 3.3-19 and 3.3-20, the Project site is almost surrounded by various densities of development, with open space and residential development to the north; a railroad, Poindexter Avenue, and light industrial and residential uses to the south; rural residential and Walnut Canyon School to the east, and rural residential and agricultural uses to the west. The surrounding developments and roadways, which include Championship Drive, and Meridian Hills Drive to the north, Walnut Canyon Road/State Route 23/Moorpark Avenue to the east, Poindexter Avenue to the south, fenced

[1] Conservation Sense and Nonsense [November 1, 2013], milliontrees.me/2013/11/01/monarch-butterflies-in-california-need-eucalyptus-trees-for-their-winter-roost/. Accessed April 18, 2022.

Gabbert Road separating the western portion, and Grimes Canyon Road to the west, separate the Project site from the remnant open space outside of the City of Moorpark. Due to the degree of disturbance on site and barriers created by the surrounding development, the Project site is not expected to be used as a movement corridor by wildlife, and the drainage that traverses the western portion of the site does not connect to other open space; therefore, it would not serve as a movement corridor. Nonetheless, as required by MM BR-11 on page 3.3-85 through 3.3-86, the development's Covenants, Conditions, and Restrictions (CC&Rs) must state that no structures shall be constructed within the open space areas. Therefore, there will be no restrictions on wildlife movement in habitat areas. Fencing and signage to be installed between the development and open space areas, to prevent domestic animal and human encroachment, is to be determined/designed in coordination with a qualified biologist. Input from the biologist will facilitate use of wildlife friendly materials. During construction, any site perimeter fencing will consist of standard stormwater pollution prevention plan **(**SWPPP) best management practices (BMP) materials (i.e., silt fencing) that are not considered harmful to wildlife. Wildlife pre-construction surveys as required by BR-1 (amphibians and reptiles), BR-2 (burrowing owl), BR-3 (woodrat and jackrabbit), BR-4 (American badger), MM BR-9 (nesting birds), as well as biological monitoring and worker awareness training during construction (MM BR-15), will reduce the potential for impacts to Non-Game Mammals and Wildlife. As indicated in the Specific Plan, split rail fencing will be used for multi-use trails. This type of fencing material would not impede local wildlife movement through the project site.

Response to Comment A-CDFW-2-9

As stated in Section 15126.6(a) of the *CEQA Guidelines*, an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparable merits of the alternatives. However, an EIR need not consider every conceivable alternative to a project. The Draft EIR provides a range of potential alternatives to the proposed project which includes those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. See Section 4.0, for a comparison of the major components associated with the Project and three alternatives that include Alternative 1 – No Project/No Development Alternative, Alternative 2: RPD 20U-N-D Alternative, and Alternative 3 – 415 Unit Reduced Visual Impact Alternative.

Response to Comment A-CDFW-2-10

As required by MM BR-7 on page 3.3-38 and 3.3-39 of the DEIR, the fuel management zone will be revegetated with native species during the fall/winter immediately following grading and construction. Establishment of native vegetation will limit opportunities for weed establishment in this zone. As required by MM BR-12, landscaping plans may not include invasive species and weed removal will occur as part of

ongoing landscape maintenance activities. Landscaping plans are required to adhere to water efficiency guidelines in the City's Municipal Code, limiting the potential for excessive water runoff that could attract Argentine ants.

Response to Comment A-CDFW-2-11

Comment noted.

A final Mitigation Monitoring and Reporting Program (MMRP) will be prepared by the City, for adoption by the City Council, based on the mitigation measures in the DEIR and any changes made as part of the responses to comments incorporated in the Final EIR.

Responses to all comments, including those from the CDFW, will be made available for review as part of the Final EIR document at least 10 days prior to certification of the Final EIR.

All fees required by State statute, including those due to the CDFW, will be paid by the City as part of the CEQA Notification of Determination process.

A-DWR

STATE OF CALIFORNIA – CALIFORNIA NATURAL RESOURCES AGENCY

GAVIN NEWSOM, *Governor*

DEPARTMENT OF WATER RESOURCES
P.O. BOX 942836
SACRAMENTO, CA 94236-0001
(916) 653-5791

April 1, 2022

Mr. Doug Spondello
City of Moorpark
799 Moorpark Avenue
Moorpark, California 93021

Notice of Completion & Environmental Document Transmittal
Hitch Ranch Specific Plan
SCH# 2019070253
Ventura County

Dear Mr. Spondello:

The Division of Safety of Dams (DSOD) has reviewed the Notice of Completion & Environmental Document Transmittal for the Hitch Ranch Specific Plan (Plan), which describes the proposed subdivision of approximately 277 acres of property in the City of Moorpark. The Plan would provide for the master-planned development of 755 residential homes, a public park, infrastructure, open space, detention basins, and debris basins.

Insufficient information is provided in the project description to make an accurate jurisdictional determination with regard to the detention basins and debris basins, and whether some or all of the work will be subject to State jurisdiction for dam safety. Therefore, the City of Moorpark needs to submit preliminary plans of the proposed work so that DSOD can make a jurisdictional determination.

1

As defined in Sections 6002 and 6003, Division 3, of the California Water Code, dams 25 feet or higher with a storage capacity of more than 15 acre-feet, and dams higher than six feet with a storage capacity of 50 acre-feet or more are subject to State jurisdiction. The dam height is the vertical distance measured from the maximum possible water storage level to the downstream toe of the barrier.

If some or all of the proposed work is subject to State jurisdiction, a construction application, together with plans, specifications, and the appropriate filing fee must be filed with DSOD for this project. All dam safety related issues must be resolved prior to approval of the application, and the work must be performed under the direction of a Civil Engineer registered in California. Erik Malvick, our Design Engineering Branch Manager, is responsible for the application process and can be reached at (916) 565-7840.

A-DWR

If you have any questions or need additional information, you may contact Area Engineer Cameron Lancaster at (916) 565-7830 or me at (916) 565-7827.

Sincerely,

Rick Draeger

Rick G. Draeger, Regional Engineer
Southern Region
Field Engineering Branch
Division of Safety of Dams

cc: Governor's Office of Planning and Research
State Clearinghouse
State.Clearinghouse@opr.ca.gov

Letter A-DWR California Department of Water Resources

Response to Comment A-DWR-1

As discussed in **Section 3.9, Hydrology and Water Quality**, and in **Appendix 3.9**, build-out of the Hitch Ranch Specific Plan will include four detention basins.

As stated on page 42 of the Hitch Ranch Hydrology Study Report 2020 Update, prepared by Kasraie Consulting and included in **Appendix 3.9** to the Draft EIR, the design for each of the proposed detention basins was evaluated based on the interpretations of California Division of Safety of Dams (DSOD) definitions as outlined in the regional flood control/regional master plan (RMP).

Basins 2 and 3 will be constructed by significantly excavating below the existing surface, creating a "pit" style impoundment. The previous RMPs and 2009 Basis of Design Study, Commonwealth Studios – Interim Condition Flood Control Improvements, Walnut and Gabbert Canyon Watershed all discuss this type of design to maximize detention without becoming a "Jurisdictional Dam" as defined by DSOD.

The purpose of the 2020 report was to outline proposed stormwater facilities to be used to meet required Regional Flood Control (RFC) Objectives and Local Flood Requirements (LFR) and included conceptual schematic plans of the four detention basins to demonstrate conceptual feasibility for the overall system. Subsequent design phases will include additional discussions with City and County staff to ensure compliance with all agency and regulatory requirements.

A-FCGMA-1

From: Riedel, Kathleen [Kathleen.Riedel@ventura.org]
Sent: Tuesday, March 29, 2022 3:54 PM
To: Douglas Spondello
Cc: Royas, Keely; Maxwell, James
Subject: FCGMA comments RE Hitch Ranch Specific Plan DEIR

Good Afternoon Mr. Douglas Spondello,

Appended are the Fox Canyon Groundwater Management Agency (FCGMA) staff comments regarding the Hitch Ranch Specific Plan DEIR. 1

Please confirm receipt of this e-mail and appended letter containing comments.

Best Regards,
Kathleen Riedel

Kathleen Riedel, PG, CEG
Groundwater Specialist
Fox Canyon Groundwater Management Agency, and
VC Public Works Agency - Watershed Protection
(805) 654-2954
kathleen.riedel@ventura.org<mailto:kathleen.riedel@ventura.org>

Letter A-FCGMA-1 Fox Canyon Groundwater Management Agency

Response to Comment A-FCGMA-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

FOX CANYON GROUNDWATER MANAGEMENT AGENCY

A STATE OF CALIFORNIA WATER AGENCY

A-FCGMA-2

March 29, 2022

Mr. Douglas Spondello, AICP, Planning Manager
City of Moorpark
Community Development Department
799 Moorpark Avenue
Moorpark, CA 93021

SUBJECT: Comments on Hitch Ranch Specific Plan Draft Environmental Impact Report, State Clearinghouse No. 2019070253

Dear Mr. Spondello:

Thank you for the opportunity to review and comment on the Hitch Ranch Specific Plan (Plan) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2019070253 prepared by Impact Sciences dated February 2022. The Plan provides information regarding the proposed development which is located to be on seven parcels (Assessor's Parcel Numbers (APNs) 511-0-020-110, -130, -160, -170, -180, -195 and -245) encompassing a total of 277.30 acres, all of which are in the Fox Canyon Groundwater Management Agency (FCGMA) boundary within the East Las Posas Management Area of the Las Posas Valley groundwater basin. FCGMA is responsible for the sustainable management of the groundwater basin and regulates groundwater extractions under authority of its enabling legislation and the Sustainable Groundwater Management Act.

The current project includes development of 755 dwelling units on approximately 92 acres, two seven-acre parks, five detention basins totaling 29.91 acres and a total combined open space area of greater than 75 acres. Per the table on Figure 2.0-3, there are to be 427 single-family units and 328 multi-family units. A 23.44-acre future development of affordable family housing is to be under a separate project.

1

Per DEIR Table 3.17-2, the estimated total potable water demand will be 286.4 acre-feet per year (AFY). The estimated total recycled water demand will be 105.7 AFY. The overall demand is approximately 392.1 AFY. Based on the DEIR, Ventura County Waterworks District No.1 (VCWWD-1) is to supply the water to meet the demands, utilizing groundwater extracted from VCWWD-1 wells, imported surface water purchased from Calleguas Municipal Water District (CMWD), and recycled water processed at the VCWWD-1 Moorpark Wastewater Treatment Facility.

The DEIR relies on the *Revised Draft Water Supply Assessment Hitch Ranch Project* (WSA) prepared by Milner-Villa Consulting LLC and released February 2020 (in DEIR Appendix 3.17 Utilities, starting on page 5900 of 6199). Per page one, the WSA evaluated a development of 755 dwelling units of which approximately 328 are to be single family residences and 427 are to be multi-family units (a flipped count from the current project) on approximately 270.6 acres. The estimated total water demand is 364.6 AFY of which 261.2 AFY is potable water, and 103.4 AFY is recycled water (per Table 3-4). Per Section 1.7 (on page 7 of the WSA), the WSA was prepared utilizing the available information known at the time and is consistent with the 2015 version of the VCWWD-1 Urban Water Management Plan (2015 UWMP). The

A-FCGMA-2

WSA utilized the *Groundwater Sustainability Plan for the Las Posas Valley Basin* in sections 2.2.1, 2.2.2, 2.2.3 describing the geologic and hydrogeologic setting of the basin and management areas. The groundwater supply presented in Table 2-4, is based on VCWWD-1's groundwater extraction allocation in 2019 under Ordinance E, 1756.118 AFY. The historical total water demand for VCWWD-1, presented in Table 3-1, is based on the VCWWD-1's 2015 and earlier UWMPs. 1

Per DEIR Section 3.17.2 *Potable Water Service* (page 3.17.2):

> *The section is based on a Water Supply Assessment (WSA) prepared by Milner-Villa Consulting in March 2019 and updated in February 2020. Copies of both of these documents are included in Appendix 3.17 of this EIR.*

Per the DEIR *Table of Contents,* the March 2019 document is not included in the Appendices. The February 2020 document is in Appendix 3.17 beginning on page 5900 of 6199; however, the March 2019 document did not appear to be included in the DEIR. The Table of Contents is correct but not the text. The March 2019 may have shed light on why information, which is outdated and/or no longer valid, was included in the DEIR on pages 3.17-4 through 3.17-7. 2

The DEIR relies on information from the following documents, obsolete plans and ordinances:

1. The 2015 UWMP which was replaced by the 2020 UWMP.
2. The 2007 Update to the FCGMA Groundwater Management Plan and earlier versions (referred as *FCGMA Management Plans*) which for the subject area has been replaced by the *Groundwater Sustainability Plan for the Las Posas Valley Basin* (adopted December 2019 and approved by California State Department of Water Resources in January 2022).
3. The FCGMA Ordinance Code (referred to in the DEIR as *Ordinance No. 8*) Historical and Baseline allocations, as well as the Ordinance E (Article 2) allocation systems are no longer in effect in the Las Posas Valley Basin. The allocation system currently in effect is the *Ordinance to Establish an Extraction Allocation System for the Las Posas Valley Groundwater Basin* adopted December 14, 2020, and fully operative October 1, 2021. 3

Key documents which serve as the foundation of the water supply assessment in the DEIR have been replaced or superseded. It is not clear if the water supply is adequate. VCWWD-1 has a groundwater extraction allocation and can purchase Metropolitan Water District imported water from Calleguas Municipal Water District. It is up to the VCWWD-1 to determine if their water portfolio is adequate to provide the water needed for the proposed development.

If you have any questions, please contact me at (805) 654-2954 or Kathleen.Riedel@ventura.org.

Sincerely,

Kathleen Riedel

Kathleen Riedel, M.S., P.G., C.E.G.
Groundwater Specialist

Letter A-FCGMA-2 Fox Canyon Groundwater Management Agency

Response to Comment A-FCGMA-2-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment A-FCGMA-2-2

Comment noted. A copy of the March 2019 Water Supply Assessment is included as Appendix A to this Final EIR.

Response to Comment A-FCGMA-2-3

As stated in the FCGMA comment in paragraph 4 on page 1, "…the (February 2020) Revised Water Supply Assessment (2020 WSA) was prepared utilizing the available information known at the time and is consistent with the 2015 version of the VCWWD-1 Urban Water Management Plan (2015 UWMP)."

The 2015 UWMP was the most applicable (and adopted) reference document to use at the time of preparation of the WSA. The information provided in the District's 2020 UWMP does not substantially change the availability of potable water and recycled water available for the Project. The 2020 UWMP identifies 11,102 acre feet per year (AFY) of "Reasonably Available Volume" in 2025 and 12,662 AFY of "Reasonably Available Volume" in 2045, while the projected water use is estimated to be 9,502 AFY in 2025 and 10,462 AFY in 2045.

The 2020 WSA was prepared utilizing the available (and adopted) information and most applicable reference documents known at the time. The 2007 FCGMA Management Plan was the most applicable (and adopted) document to use at the time of preparation of the 2020 WSA.

The District's groundwater allocation was approved in September 2020 by the Courts in a settlement. The settlement gives the District 10.6% of the East Las Posas Basin Safe Yield. Effective starting in 2021, the District's groundwater allocation will be 2,195 AFY which is 439 AFY higher than the projected groundwater supply of 1,756 AFY identified in the 2015 UWMP. The Safe Yield of the basin and the District's allocation will be examined every five years and adjusted accordingly by FCGMA to meet the goals in the GSP by 2040. See the District's 2020 UWMP, Chapter 6, for additional details.

As previously stated, the 2020 WSA was prepared utilizing the available (and adopted) information and most applicable reference documents known at the time. The District's 2020 UWMP identifies 11,102 AFY

of "Reasonably Available Volume" in 2025 and 12,662 AFY of "Reasonably Available Volume" in 2045, while the projected water use is estimated to be 9,502 AFY in 2025 and 10,462 AFY in 2045. Similarly, the 2020 UWMP does not identify a water shortage for any year within the period 2025-2045 under normal water year supply and demand comparisons, single-dry water year supply and demand comparisons, or multiple-dry water year supply and demand comparisons.

A-LA_RWQCB-1

From: Cuevas, Veronica@Waterboards <Veronica.Cuevas@waterboards.ca.gov>
Sent: Monday, April 04, 2022 4:54 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Cc: Purdy, Renee@Waterboards <Renee.Purdy@waterboards.ca.gov>; Newman, Jenny@Waterboards <Jenny.Newman@waterboards.ca.gov>; Lim, Jeong-Hee@Waterboards <Jeong-Hee.Lim@waterboards.ca.gov>
Subject: Hitch Ranch Specific Plan Draft EIR - Comment Letter

Attached please find correspondence from the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) regarding the Hitch Ranch Specific Plan Draft EIR.

The Los Angeles Water Board Watershed Regulatory Section sends our correspondence with PDF format through email. You will not receive a hard copy unless you are the addressee of the correspondence or you do not have an email address. If you are no longer the responsible party, nor interested in receiving correspondence regarding the subject facility, please kindly reply to this email and we'll remove you from the cc list.

The attached document is in Adobe Acrobat PDF format. You can obtain an Acrobat Reader free of charge at http://www.adobe.com/products/acrobat/readstep2.html

1

Veronica Cuevas

A-LA-RWQCB-1

Water Resource Control Engineer
Los Angeles Regional Water Quality Control Board
Municipal Permitting Unit
320 West 4th Street Suite 200, Los Angeles, CA 90013
telephone (213) 576-6662 | fax (213) 576-6660
Veronica.Cuevas@waterboards.ca.gov

Letter A-LA_RWQCB-1 Los Angeles Regional Water Quality Control Board

Response to Comment LA_RWQCB-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

A-LA-RWQCB-2

CALIFORNIA Water Boards

GAVIN NEWSOM GOVERNOR

JARED BLUMENFELD SECRETARY FOR ENVIRONMENTAL PROTECTION

Los Angeles Regional Water Quality Control Board

April 4, 2022

Mr. Dough Spondello, AICP
Planning Manager
City of Moorpark
799 Moorpark Avenue
Moorpark, CA 93021

COMMENTS REGARDING DRAFT ENVIRONMENTAL IMACT REPORT – HITCH RANCH SPECIFIC PLAN (STATE CLEARINGHOUSE 2019070253)

Dear Mr. Spondello,

The Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) appreciates the opportunity to comment on the Draft Environmental Impact Report (DEIR) for the Hitch Ranch Specific Plan Project. Los Angeles Water Board Staff reviewed the DEIR and have the following comments regarding this project: 1

1. Section 1.5, mitigation Measure HYD-3 (page 1.0-48) discusses Post Construction Stormwater Management Plan (PCSMP) guidelines contained in the National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Ventura County. However, the Municipal Separate Storm Sewer System (MS4) NPDES permit for Ventura County (Order No. R4-2010-0108) is no longer in effect because Order No. R4-2021-0105, adopted by Los Angeles Water Board on July 23, 2021, went into effect on September 11, 2021. Please revise the references to the MS4 permit throughout the DEIR and revise the discussion regarding any applicable requirements. The same comment applies for Section 3.9 on page 3.9-29 of the DEIR. 2

2. Section 1.5, mitigation Measure HYD-4 (page 1.0-50) discusses dewatering operations in reference to the State Water Board's General NPDES Permit for Storm Water Discharges Associated with Construction Activity. However, dewatering operations are regulated under the General NPDES Permitting ORDER NO. R4-2018-0125 GENERAL NPDES PERMIT NO. CAG994004, Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties. Please submit a Notice of Intent (NOI) to the Los Angeles Water Board prior to initiating dewatering operations. Also, in Section 2.6.1 of the DEIR, consider adding "Dewatering Permit" to the list of permits. 3

3. Section 2.5.5 (page 2.0-13) discusses constructing Retention Basin 2 in the arroyo adjacent to Gabbert Road and Walnut Canyon Channel, and Retention Basin 3 along Walnut Canyon Channel. However, grading activity in a streambed may require a Clean Water Act (CWA) Section 401 Certification and Waste Discharge Requirements for dredge and fill activities. Please submit a Report of Waste Discharge (ROWD) to the Los Angeles Water Board at RB4-401Certification@waterboards.ca.gov, to request a pre-filing meeting for the retention basins. In Section 2.6.1 of the DEIR, consider adding "401 Certification and WDRs for Retention Basins" to the list of permits. 4

4. Section 3.3.8.2 (page 3.3-84) discusses the California Fish and Game Code Section 1602 for impacts to waters of the United States and streambeds, but does not mention the requirement to obtain a CWA Section 401 Certification/WDRs from the Los Angeles Water Board. Please revise the discussion to mention the 401 Certification and WDRs comment described in Comment 3 above. 5

5. Section 3.10, Public and Facility Service Goal 12 (page 3.10-19) discusses that the Project Applicant will enter into an agreement with the Ventura County Waterworks District to fund recycled water infrastructure within the District to increase the recycled water infrastructure to offset irrigation of common areas, open space, and landscaped areas. However, prior to the expansion of the recycled water use area, a Title 22 Engineering Report would need to be submitted to the State Water Resources Control Board, Division of Drinking Water (DDW) for approval and to the Los Angeles Water Board for concurrent review. 6

6. Section 3.17, Potential Uses of Recycled Water (page 3.17-10) discusses that the Project would utilize the recycled water for on-site irrigation once that service is made available by the District. However, prior to utilizing recycled water for irrigation, the Ventura County Health Department would need to inspect the recycled water purple pipe distribution line to assess compliance with plumbing code requirements, DDW would need to approve the Title 22 Engineering Report and write a letter stating the conditions of approval, and the Los Angeles Water Board would need to revise the Water Reclamation Requirements/WDRs to incorporate DDW's conditions of approval. 7

7. Section 3.17.3.1, Wastewater (page 3.17-17) discusses that the treatment plant is permitted to discharge directly into the Arroyo Simi. However, Ventura County Waterworks District No. 1 (District) has requested termination of its NPDES permit. It is expected that by the end of 2022, the Moorpark WWTP would no longer have the ability to discharge treated effluent to Arroyo Las Posas. Please revise the discussion to reflect the District's plans. 8

8. Section 3.17.3.3 (page 3.17-19) discusses that the Moorpark Water Reclamation Facility is in the process of constructing tertiary treatment system upgrades that 9

will allow the recycled water system to be operated with more flexibility and efficiency, and concludes that, therefore, no significant project impacts are expected to occur. In footnote 4 of that page, the DEIR references the following Ventura County Public Works, Engineering and Development website: https://www.vcpublicworks.org/wsd/engineeringanddevelopment/. However, the website mentions that the Piru Wastewater Treatment Plant, not the Moorpark WWTP, will be upgraded to include tertiary treatment facilities. Please correct the error or provide a different reference for the planned upgrades to the Moorpark Wastewater Treatment Plant. 9

If you have any questions, please contact Veronica Cuevas at Veronica.Cuevas@waterboards.ca.gov.

Sincerely,

Renee Purdy
Executive Officer

Letter A-LA_RWQCB-2 Los Angeles Regional Water Quality Control Board

Response to Comment LA_RWQCB-2-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment LA_RWQCB-2-2

Comment noted. The analysis was prepared utilizing the available (and adopted) information and the most-applicable reference documents known at the time of the publication of the Notice of Preparation (NOP) on July 10, 2019. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

No reference to the Municipal Separate Storm Sewer System (MS4) NPDES permit for Ventura County Order No. is included in the mitigation measure, so no revision is required.

Revisions have been made in Section 3.9, Hydrology and Water Quality to reflect the new permit number. Please refer to **Section 3.0, Revisions to the Draft EIR**, **3.9 Hydrology and Water Quality**.

Response to Comment LA_RWQCB-2-3

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

No reference to the specific permit number is included in the mitigation measure, so no revision is required.

The need for a dewatering permit has been added to the listing of permits on page 2.0-27. Please refer to **Section 3.0, Revisions to the Draft EIR**, **3.9, Hydrology and Water Quality**.

Response to Comment LA_RWQCB-2-4

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

Revisions will be made in the Final EIR reflecting the need for a 401 Certification and WDRs for Retention Basins permit. Please refer to **Section 3.0, Revisions to the Draft EIR, Section 2.0, Project Description**.

Response to Comment LA_RWQCB-2-5

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

Revisions will be made in the Final EIR reflecting the need for a 401 Certification and WDRs for Retention Basins permit in mitigation measure BR-8. Please refer to **Section 3.0, Revisions to the Draft EIR, Section 3.3, Biological Resources**.

Response to Comment LA_RWQCB-2-6

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

As a condition of approval for the Hitch Ranch Specific Plan project will require the project applicant to enter into an agreement with the District to fund recycled water infrastructure..

Response to Comment LA_RWQCB-2-7

Please refer to Response to Comment LA_RWQCB-2-6.

Response to Comment LA_RWQCB-2-8

The analysis regarding the Moorpark Wastewater Treatment Plant (WWTP) was prepared utilizing the available (and adopted) information and most applicable reference documents known at the time.

Notwithstanding, the discussion has been revised. Please refer to **Section 3.0, Revisions to the Draft EIR, Section 3.17, Utilities**.

Response to Comment LA_RWQCB-2-9

The analysis regarding the Moorpark Water Reclamation Facility was prepared utilizing the available (and adopted) information and most applicable reference documents known at the time.

Notwithstanding, the discussion and the footnote have been revised. Please refer to **Section 3.0, Revisions to the Draft EIR, Section 3.17, Utilities**.

A-VCAPCD-1

From: Nicole Collazo [nicole@vcapcd.org]
Sent: Monday, April 4, 2022 3:09 PM
To: Douglas Spondello
Cc: John Henkelman; Wunna Aung; Ciuffetelli, Anthony
Subject: APCD Public Comment Hitch Ranch Specific Plan DEIR

Good afternoon Doug,

Our comments for the DEIR for project referenced above are attached, using the County RMA's project number assigned (22-003). We will continue our communications to obtain the more detailed modeling files and offer more feedback on this or concurrence after review by our toxics engineer. You can contact me if you have any questions on any comments in the letter.

1

Thank you,

Nicole Collazo
Air Quality Specialist
VCAPCD Planning Division
4567 Telephone Rd. Ventura, CA 93003
www.vcapcd.org<http://secure-web.cisco.com/1rgOrPfLlaeswzScwz-V_O6otX0OPEZYM91_hlfKLH7bYkT30zUHiES-voqT2PGKQjxHbpzfB_eQtZXFgK7SDPGby0yu04fCbkffRiCnpIZjo-kUYBR4CjT3UlcnZaVBmuFwyDysMCYzjI1Sv4cW471Xzaimqk358l5ZMB9PfdT1XVSGQDohj6-YqydOmbBtvKRNneo9lpmfcMTKm5EQdo9VychRNH9XulfULSgbJhYA-a4zq73W0h-JtrpKwQPsSzuI01uiykaQqSo7oNo6XPwVCt4mSwFgxVd-cGtWMSj9aqV-HkR4yEZ-flua-oIJ0_45FHTqKsovoopm0HQUYRy75MRv1GT6R2Wt262nP7kgl2Q_w_zbDuBNzDZ6FMV36vKp3ktFOAw6gMymOLymiWynDNvknW1rTZalVkyYHnAjUEmb9Fql2lhZ_1wQt0zHm/http%3A%2F%2Fwww.vcapcd.org%2F>
nicole@vcapcd.org<mailto:nicole@vcapcd.org> | 805-303-3674
[logo w text]

Letter A-VCAPCD-1 Ventura County Air Pollution Control District

Response to Comment A-VCAPCD-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

A-VCAPCD-2

Ventura County
Air Pollution
Control District

4567 Telephone Rd
Ventura, California 93003

tel 805/303-4005
fax 805/456-7797
www.vcapcd.org

Ali Reza Ghasemi, PE
Interim
Air Pollution Control Officer

VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT
Memorandum

TO: Doug Spondello, City of Moorpark DATE: April 4, 2022

FROM: Nicole Collazo, Air Quality Specialist, VCAPCD Planning Division

SUBJECT: City of Moorpark Hitch Ranch Specific Plan Draft Environmental Report Public Comment (RMA 22-003)

Ventura County Air Pollution Control District (APCD) staff has reviewed the subject Draft Environmental Impact Report (DEIR) for the Hitch Ranch Specific Plan project (project). The project proposes to develop a residential tract consisting of 755 dwelling units on approximately 92gross acres including approximately 427 single-family units, and approximately 328 multi-family units. Of the approximately 328 multi-family units, approximately 135 units would be affordable apartment units. The project location is generally located north of Poindexter Avenue, west of Casey Road, and extending approximately 1 700 feet to the west of Gabbert Road. The Lead Agency for the project is the City of Moorpark. 1

General Comments

APCD submits the following comments based on the DEIR available for public review for the Air Quality environmental impact section.

1) Page 3.2-7. The last sentence of the second paragraph may need further clarification. The statement says "The Proposed Project would be subject to the APCD rules and regulations to reduce project-related emissions and minimize potential air quality impacts." The only rules and regulations the project would be subject to are related to the construction phases for nuisance and dust impacts, not the operational side of the project. The APCD does not regulate emissions from residential projects nor does it regulate mobile emissions such as those from automobiles. 2

2) Page 3.2-12. Ventura County does not have an Oxnard Plain Airshed. This term was used in an outdated AQMP (1987) and is no longer subdivided into these categories. Please remove from the discussion. It is, however, still correct that VCAPCD is part of the South Central Coast Air Basin (SCAAB). 3

3) Page 3.2-14. APCD no longer has a monitoring station in San Nicolas Island and Ventura. Please remove these station locations from the discussion. 4

4) Page 3.2-15. The DEIR states "Motor vehicles are the primary source of pollutants in the 5

region. There are no large stationary sources that would impact the residents of the Proposed Project in the vicinity of the Project site." (paragraph 4). We would also like to note that another potential source of emissions is highway 118, located approximately a half-mile from the closest sensitive receptor on the project site, which potentially may be the park that will be directly adjacent to the railroad line on the southern boundary of the site map. We recommend conducted a screening analysis to quantify the potential toxic impact SR-118 may have on the closest sensitive receptors on the project site. If the toxic impact is significant, we recommend any or all of the following mitigation measures: relocating the park location away from the source of toxics, construction a solid wall or natural vegetative barrier along the southern border, weather proofing the home windows and doors, locating the air intake on the opposite side of the source of toxics. 5

5) Table 3.2-5. Data provided on the monitoring stations is over 5 years old. We suggest updating the table with more current monitoring data (2016-2017), preferably years that do not reflect the COVID-19 state and county shutdown timeframes, to reflect more accurate air pollution data of the region. 6

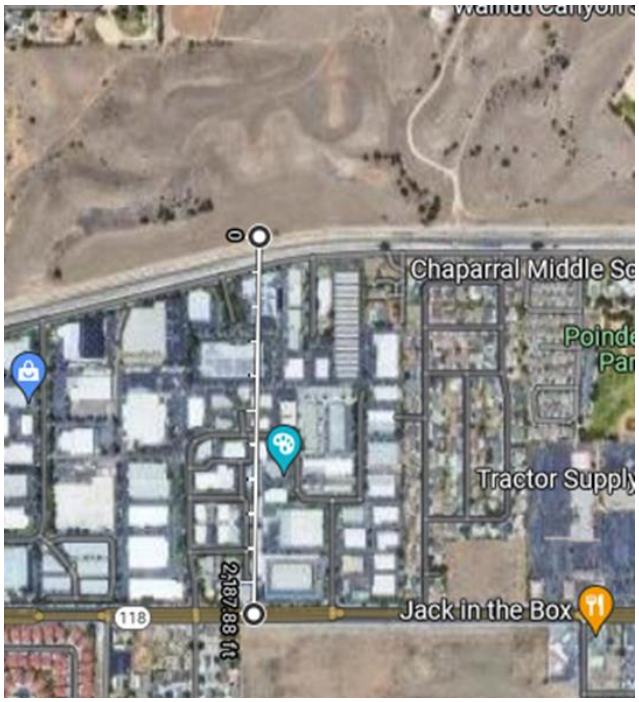
6) Page 3.2-15. The statement is incorrect when describing Tables 3.2-5 and Table 3.2-6 (underlined): "A summary of the monitored values for O3 and PM2.5 at the Thousand Oaks monitoring station <u>for the past three years</u> is presented in…". 7

7) Page 3.2-17. The statement "The existing light-industrial uses located to the south of the southwestern portion of the Project site are the primary source of potential TAC emissions in the vicinity the Project site." may be incorrect if the potential TAC emissions from SR-118 are higher. As previously suggested, we recommend an HRA or screening analysis to quantify the toxics impact of an existing source to potential sensitive receptors of the project. This was also recommended in the APCD comment letter for the NOP comment period dated August 8, 2019 (page 109 of 6199 of combined Appendices document). 8

8) Page 3.2-17 The previous comment also applies to the last sentence in the paragraph regarding existing potential sources of TACs. According to CARB, air pollution studies indicate that living close to high traffic and the associated emissions may lead to adverse health effects beyond those associated with regional air pollution in urban areas. The CARB 2005 Land Use Handbook recommends not siting residential areas near freeways for at least 500 feet. Many of these epidemiological studies have focused on children. A number of studies identify an association between adverse non-cancer health effects and living or attending school near heavily traveled roadways. These studies have reported associations between residential proximity to high traffic roadways and a variety of respiratory symptoms, asthma exacerbations, and decreases in lung function in children. According to the CDC, a growing body of evidence demonstrates that minority populations and persons of lower socioeconomic status experience higher residential exposure to traffic and traffic-related air pollution than non-minorities and persons of higher socioeconomic status (CDC, Residential Proximity to Major Highways 2010). In addition to the respiratory health effects in children, proximity to freeways increases potential cancer risk and contributes to total particulate matter exposure. There are three carcinogenic toxic air 9

contaminants that constitute the majority of the known health risk from motor vehicle traffic – diesel particulate matter (diesel PM) from trucks, and benzene and 1,3-butadiene from passenger vehicles. On a typical urban freeway (truck traffic of 10,000-20,000/day), diesel PM represents about 70 percent of the potential cancer risk from the vehicle traffic. Diesel particulate emissions are also of special concern because health studies show an association between particulate matter and premature mortality in those with existing cardiovascular disease. 9

9) Page 3.2-18. The following statement is incorrect. "In addition, the nearest freeways (State Routes 23 and 118) are over 1-mile from the Project site. For these reasons, no significant impacts to on-site sensitive receptors are anticipated with respect to existing mobile source TACs." The project's most southern boundary is less than 1 mile away, as seen below from a Google satellite imagery with distance indicated (approximate location of proposed park). The project boundary for 1 mile away from the 118 is on the northernmost boundary of the proposed project, also below.



10

10) CM AQ-1. We recommend adding an additional measure here to include the APCD Complaints Hotline phone number 805-303-3700 on-site during construction phases on a sign that is viewable to the public. APCD has seen an increase in dust complaints in recent years due to increased drought conditions and during the start of the COVID-19 pandemic where most employees were working from home and were being exposed to fugitive dust from construction projects nearby. 11

11) CM AQ-2. In the first measure listed, we recommend adding "to no more than 5 minutes, as required in Title 13, CCR §2485, §2449(d)(3), respectively. The idling limit does not apply to: (1) idling when queuing; (2) idling to verify that the vehicle is in safe operating condition; (3) idling for testing, servicing, repairing or diagnostic purposes; (4) idling necessary to accomplish 12

work for which the vehicle was designed (such as operating a crane); (5) idling required to bring the machine system to operating temperature, and (6) idling necessary to ensure safe operation of the vehicle.”. 12

12) We would like to obtain the HRA modeling files to perform a more technical review of the HRA performed and results and memo attached in the Appendix. We are currently in communication with the applicant consultant and are in the process of obtaining these files for a more thorough review. 13

13) The DEIR quantified the project’s operational emissions and found that the total operational emissions exceeds the numerical threshold of 25 lbs./day for reactive organic compounds (ROC) (DEIR Table 3.2-9) by (14 lbs./day mobile source category). It then suggests mitigation but only on the mobile emissions sources as “Feasible mitigation measures are not available to reduce operational area source emissions” (DEIR, Page 3.2-39). After proposing to mitigate the mobile emissions by contributing to a TDM Fund, which is recommended in our guidelines and is considered feasible mitigation, it is concluded Significant and Unavoidable Impacts will still occur. We would like state that this methodology is not common practice. The project’s operational emissions should be analyzed as a whole, combining all project emission sources (Air Quality Assessment Guidelines AQAG, Section 5.3.3). If the total combined emissions are over the significance threshold, feasible mitigation measures are then proposed, but not necessarily separated by emission source. For example, in the case of this project, the operational emissions exceed the significance threshold by 16 lbs./day (41 total lbs./day ROC – 25 lbs./day ROC threshold). You may propose feasible and quantifiable mitigation measures, such as constructing a certain amount of electric vehicle charging stations for residential on-site use (you can quantify this reduction by reducing the amount of vehicle trips per day or VMT per year in the model just as was done for percentage assumed to use the Metrolink station), installing bicycle racks along all proposed lots, providing a shuttle service to major nearby destinations, providing bike lanes that connect to the existing roadway system, requiring landscape equipment to be electric if an HOA service is provided, etc., and if after some or all of these are proposed, the difference left over, if any, can be offset by contributing to a TDM Fund, as outlined in MM AQ-3. After contribution to a TDM Fund, mitigation will be less than significant, and therefore, a Significant and Unavoidable Impact will not occur, because the emissions were either mitigated on-site or off-site. On a side note, a thorough review of the CalEEMod model was conducted. It was seen that most of the ROC emissions that were contributing to a significant air quality impact were from the Consumer Products category. We believe the emission factor that is pre-programmed in to the model is slightly outdated. The CalEEMod Version 2020.4.0 User Guide Appendix E3 outlines the methodology behind the assumptions used to calculate ROC from Consumer Products. The emission factor is from a 2003 CARB Emissions Inventory, which is approximately 15 years old. The user guide also suggests 2 other emission factors, one of them being from an emission factor used in South Coast AQMD’s Rule 1143, Consumer Paint Thinners and Multi-Purpose Solvents (1.98E-05 lbs. ROC/building sq. ft.; 25 g/L ROC limit is still indicated in existing Rule 1143, Page 5 located here; Appendix E-3 located here, Page E-9). Since APCD shares a boundary with SCAQMD, usage, production and consumption is very similar and if we use this updated emission factor from this rule, the ROC emissions from Consumer Products go down to 21.7 lbs./day ROC. We recommend using standard methodology 14

and combine all emissions, suggest mitigation measures not proposed before mentioned above, quantify mitigation, update emission factor for Consumer Products, and re-evaluate against the significance threshold. If still over 25 lbs./day, contributing to a TDM Fund for off-site mitigation projects (public E/V charging station, Park-n-Ride, community transit programs, incentives for bus passes, etc.) is still considered mitigation to a Less than Significant Impact for Air Quality (AQAG, Section 7.5.3). Note- the TDM Fund fee formula aggregates the difference of all combined emission sources against the threshold, not one specific emission source category over the other.

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Thank you for the opportunity to comment on the project. If you have any questions, you may contact me at nicole@vcapcd.org.

Letter A-VCAPCD-2 Ventura County Air Pollution Control District

Response to Comment A-VCAPCD-2-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment A-VCAPCD-2-2

Comment noted.

The section discussing rules and regulations that the Proposed Project would be subject to on page 3.2-7 is revised. Text added to the Draft EIR is shown in underline format, and deleted text is shown in strikethrough, as follows:

> To implement these strategies, the VCAPCD Board has adopted specific rules and regulations to limit emissions from stationary and mobile sources and activities within the County. These rules and regulations identify specific pollution-reduction measures, which must be implemented in association with various uses and activities. These rules not only regulate the emissions of criteria pollutants, but also emissions of TACs and HAPs. The rules and regulations are subject to ongoing refinement by the VCAPCD. Enforcement of these rules and regulations is carried out through a permitting process that monitors emissions generated by stationary sources, such as power plants, manufacturing operations, and large and small businesses, that use products that release ozone-forming precursors or TACs into the atmosphere. The Proposed Project would be subject to the VCAPCD rules and regulations to reduce project-related emissions and minimize potential air quality impacts. Specifically, the Proposed Project would be subject to rules and regulations related to construction regarding nuisance dust impacts, equipment exhaust, and architectural coating. In addition, operational activities associated with the proposed residences would be required to comply with rules and regulations related to nuisance, natural gas-fired water heaters, and architectural coatings. These rules and regulations are discussed in further detail below. The VCAPCD does not regulate mobile emissions such as those from automobiles.

Please also refer to **Section 3.0, Revisions to the Draft EIR, Section 3.2, Air Quality**.

Response to Comment A-VCAPCD-2-3

Comment noted.

The section discussing geographical air basins on page 3.2-12 is revised as follows:

> There are four main meteorological conditions that affect air quality in the valley: a regional, semi-permanent high-pressure system; wind currents created or affected by local topography; Santa Ana winds; and seasonal storms. The dispersion of air pollutants in ~~the Oxnard Plain Airshed, in which~~ the City of Moorpark ~~is located,~~ is often restricted by frequent temperature inversions created by the semi-permanent high-pressure system. The temperature inversion is normally just below the summit areas of the surrounding mountains, which tend to trap air pollutants in a limited, near-surface atmospheric volume.

Response to Comment A-VCAPCD-2-4

Comment noted.

The section discussing air monitoring stations within the VCAPCD on page 3.2-14 is revised as follows:

> To identify ambient concentrations of the criteria pollutants, the VCAPCD operates air quality monitoring stations throughout Ventura County. These stations are located in El Rio, Ojai, Piru, ~~San Nicolas Island,~~ Simi Valley, and Thousand Oaks~~, and Ventura~~.

Please also refer to Section 3.0, Revisions to the Draft EIR, Section 3.2, Air Quality.

Response to Comment A-VCAPCD-2-5

Comment noted.

The discussion on page 3.2-15 in the Draft EIR notes that motor vehicles are the primary source of pollutants in the region, which includes motor vehicles on nearby highways. In addition, a screening analysis of potential project impacts related to toxic air contaminant (TAC) emissions is included on pages 3.2-17 and 3.2-18 of the Draft EIR. As discussed therein (and further clarified with revisions noted in Response to Comment A-VCAPCD-10), the project would not site new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day consistent with CARB's recommendations in its *Air Quality and Land Use Handbook* (2005).

The section discussing local sources of air pollutant emissions on page 3.2-15 is revised as follows:

> Motor vehicles, including those traveling on nearby highways such as SR 23 and SR 118, are the primary source of pollutants in the region. There are no large stationary sources that would impact the residents of the Proposed Project in the vicinity of the Project site.

Response to Comment A-VCAPCD-2-6

Comment noted.

As NO_2 no longer exceeds the health-based standard levels it has been removed from the monitoring data.[2]

Table 3.2-5 and Table 3.2-6 on page 3.2-16 to 3.2-17 are revised as follows:

Table 3.2-5
Simi Valley-Cochran Street Air Monitoring Station Ambient Pollutant Concentrations

Pollutant	Standards[1]	Year		
		~~2016~~2017	~~2017~~2018	~~2018~~2019
OZONE (O_3)				
Maximum 1-hour concentration monitored (ppm)		~~0.101~~0.103	~~0.103~~0.101	~~0.101~~0.089
Maximum 8-hour concentration monitored (ppm)		~~0.083~~0.094	~~0.094~~0.092	~~0.092~~0.078
Number of days exceeding state 1-hour standard	0.09 ppm	~~1~~3	~~3~~2	~~2~~0
Number of days exceeding federal/state 8-hour standard	0.070 ppm	~~7~~20	~~20~~14	~~14~~7
~~**NITROGEN DIOXIDE (NO_2)**~~				
~~Maximum 1-hour concentration monitored (ppm)~~		~~0.039~~	~~0.046~~	~~0.043~~
~~Annual average concentration monitored (ppm)~~		~~0.008~~	~~0.008~~	~~0.008~~
~~Number of days exceeding state 1-hour standard~~	~~0.18 ppm~~	~~0~~	~~0~~	~~0~~
RESPIRABLE PARTICULATE MATTER (PM10)				
Maximum 24-hour concentration monitored ($\mu g/m^3$)		~~156.3~~149.8	~~149.8~~107.6	~~107.6~~124.3
Annual average concentration monitored ($\mu g/m^3$)		~~22.9~~24.0	~~24.0~~23.5	~~23.5~~19.5
Number of samples exceeding state standard	50 $\mu g/m^3$	~~4~~9	~~9~~6.1	~~6.1~~4.0
Number of samples exceeding federal standard	150 $\mu g/m^3$	~~1~~0	0	0
FINE PARTICULATE MATTER (PM2.5)				
Maximum 24-hour concentration monitored ($\mu g/m^3$)		~~34.9~~31.3	~~31.3~~29.6	~~29.6~~20.0
Annual average concentration monitored ($\mu g/m^3$)		~~8.7~~9.2	~~9.2~~8.7	~~8.7~~7.6
Number of samples exceeding federal standard	35 $\mu g/m^3$	0	0	0

Source: California Air Resources Board, "Air Quality Data Statistics," http://www.arb.ca.gov/adam/. 2019.
NA = not available
[1] *Parts by volume per million of air (ppm), micrograms per cubic meter of air ($\mu g/m^3$), or annual arithmetic mean (aam).*
[2] *The 8-hour federal O_3 standard was revised from 0.075 ppm to 0.070 ppm in 2015. The statistics shown are based on the 2015 standard of 0.070 ppm.*

Table 3.2-6
Thousand Oaks-Moorpark Road Air Monitoring Station Ambient Pollutant Concentrations

Pollutant	Standards[1]	Year		
		~~2016~~2017	~~2017~~2018	~~2018~~2019
OZONE (O_3)				
Maximum 1-hour concentration monitored (ppm)		~~0.080~~0.090	~~0.090~~0.080	~~0.080~~0.082

2 California Air Resources Board, *iADAM Frequently Asked Questions*, 5.

Pollutant	Standards[1]	Year		
		~~2016~~2017	~~2017~~2018	~~2018~~2019
Maximum 8-hour concentration monitored (ppm)		~~0.076~~0.073	0.073	~~0.073~~0.074
Number of days exceeding state 1-hour standard	0.09 ppm	0	0	0
Number of days exceeding federal/state 8-hour standard	0.070 ppm	~~1~~6	~~6~~1	1
FINE PARTICULATE MATTER (PM2.5)				
Maximum 24-hour concentration monitored (µg/m^3)		~~35.2~~32.0	~~32.0~~41.5	~~41.5~~24.5
Annual average concentration monitored (µg/m^3)		~~9.6~~8.9	~~8.9~~9.2	~~9.2~~7.2
Number of samples exceeding federal standard	35 µg/m3	0	~~0~~1	~~1~~0

Source: California Air Resources Board, "Air Quality Data Statistics," http://www.arb.ca.gov/adam/. 2019.
NA = not available
[1] *Parts by volume per million of air (ppm), micrograms per cubic meter of air (µg/m^3), or annual arithmetic mean (aam).*
[2] *The 8-hour federal O_3 standard was revised from 0.075 ppm to 0.070 ppm in 2015. The statistics shown are based on the 2015 standard of 0.070 ppm.*

Please also refer to Section 3.0, Revisions to the Draft EIR, Section 3.2, Air Quality.

Response to Comment A-VCAPCD-2-7

Comment noted.

The section discussing air monitoring data within the VCAPCD on page 3.2-15 is revised as follows:

> The monitoring stations located closest to the Proposed Project site and most representative of air quality within the Hitch Ranch Specific Plan area are the Simi Valley–Cochran Street and Thousand Oaks–Moorpark Road stations. Both stations monitor O_3 and PM2.5 while the Simi Valley monitoring station also monitors ~~NO_2 and~~ PM10. CO monitoring was eliminated in Ventura County in 2004 as part of network changes in response to the proposed National Monitoring Strategy set forth by the U.S. EPA. The decision to eliminate CO monitoring was approved by both the U.S. EPA and CARB. Ventura County has met the CO standard for some time now. In addition, SO_2 monitoring in Ventura County was eliminated in 2004 and ambient concentrations for lead and sulfate are well below the state standards.[3] NO_2 also no longer exceeds the health-based standard levels and is not listed in the monitoring data.[4]
>
> A summary of the monitored values for O_3, ~~NO_2,~~ PM10, and PM2.5 at the Simi Valley monitoring station for the ~~past~~ three years prior to the Coronavirus pandemic which began in 2020, is presented in **Table 3.2-5, Simi Valley-Cochran Street Air Monitoring Station Ambient Pollutant**

3 Ventura County Air Pollution Control District, *Final 2009 Ambient Air Monitoring Network Plan*, (2009) 13.

4 California Air Resources Board, *iADAM Frequently Asked Questions*, 5.

Concentrations. The values show that the Simi Valley monitoring station has registered values above state and/or federal standards for O_3, and PM10.

A summary of the monitored values for O_3 and PM2.5 at the Thousand Oaks monitoring station for the ~~past~~ three years prior to the start of the ongoing Coronavirus pandemic, which began in 2020, is presented in **Table 3.2-6, Thousand Oaks-Moorpark Road Air Monitoring Station Ambient Pollutant Concentrations**. The values show that the Thousand Oaks monitoring station has registered values above state and federal standards for O_3.

Please also refer to Section 3.0, Revisions to the Draft EIR, Section 3.2, Air Quality.

Response to Comment A-VCAPCD-2-8

See Response to Comment A-VCAPCD-2-9.

Response to Comment A-VCAPCD-2-9

This comment summarizes and expands on the discussion presented on pages 3.2-17 and 3.18 of the Draft EIR. As discussed therein (and further clarified with revisions noted in Response to Comment A-VCAPCD-10), the Draft EIR adequately determined the project would be consistent with CARB's recommendation to avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. Specifically, the Project Site is located more than 2,100 feet from SR-118 and more than one mile from SR-23. The health studies referenced in the comment and the CARB guidance document *Air Quality and Land Use Handbook (CARB 2005)*, indicate the association of traffic-related emissions with adverse health effects was seen within 1,000 feet and was strongest within 300 feet. This demonstrates that the adverse effects diminished with distance (CARB 2005, pages 8-9). As the Project Site is located more than one mile from SR-23 and more than 2,100 feet from SR-118, the receptors associated with the Proposed Project would not be subject to the adverse health effects identified in CARB's *Air Quality and Land Use Handbook* (2005).

In addition, regarding health risks from existing emissions sources, the California Supreme Court ruling in *California Building Industry Association vs. Bay Area Air Quality Management District* (December 17, 2015) held that, "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project's risks exacerbate those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment – and not the environment's impact on the project – that compels an evaluation of how future residents or users could be affected by exacerbated conditions." As such, assessing health risks from existing sources equates to assessing the environment's impact on the project and the California Supreme

Court ruled that this analysis would not be consistent with CEQA. With respect to the Project's potential to exacerbate existing environmental conditions, the Draft EIR included a thorough evaluation of the Project's generation of air quality emissions including an assessment of potential health risks. See Appendix 3.2 to the Draft EIR. No further analysis is required.

Response to Comment A-VCAPCD-2-10

Comment noted (see also Response to Comment A-VCAPCD-2-9).

The section discussing proximity to SR-118 on page 3.2-18 is revised as follows:

In addition, the nearest freeways (State Routes 23 and 118) are <u>located</u> over 1-mile <u>and over 2,100 feet, respectively,</u> from the Project site. <u>Thus, the project would be consistent with CARB's recommendation to avoid siting new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day.</u> For these reasons, no significant impacts to on-site sensitive receptors are anticipated with respect to existing mobile source TACs.

Please also refer to Section 3.0, Revisions to the Draft EIR, Section 3.2, Air Quality.

Response to Comment A-VCAPCD-2-11

Comment noted.

The section discussing mitigation measure CM-AQ-1 starting on page 3.2-36 is revised as follows:

CM AQ-1: The following control measures provided in the *VCAPCD Air Quality Assessment Guidelines* to minimize the generation of fugitive dust (PM10 and PM2.5), ROC, and NO_x during construction activities shall be implemented during construction of the Proposed Project:

- The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust.
- Pre-grading/excavation activities shall include watering the areas to be graded or excavated before grading or excavation operations commences. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.
- Fugitive dust produced during grading excavation and construction activities shall be controlled by the following activities:

- All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization material, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible.

- Graded and/or excavated inactive areas of the construction site shall be monitored at least weekly for dust stabilization. Soil stabilization methods, such as water and roll-compaction, and environmentally safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally safe dust suppressants to prevent excessive fugitive dust.

- Signs limiting traffic to 15 miles per hour or less shall be posted on site.

- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off site or on site. The site superintendent/supervisor shall use discretion in conjunction with the VCAPCD in determining when winds are excessive.

- Adjacent streets and roads shall be swept at least once per day, preferably at the end of the day if visible soil material is carried over to adjacent streets and roads.

- Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations.

- <u>During the construction phase, signs shall be posted on site and viewable to the public with the VCAPCD Complaints Hotline phone number 805-303-3700.</u>

Timing/Implementation: During construction activities

Enforcement/Monitoring: City of Moorpark Community Development and Public Works Departments

Please also refer to Section 3.0, Revisions to the Draft EIR, Section 3.2, Air Quality.

Response to Comment A-VCAPCD-2-12

Comment noted.

The section discussing mitigation measure CM-AQ-2 starting on page 3.2-36 is revised as follows:

CM AQ-2: During construction contractors shall comply with the following measures to reduce NO_x and ROC from heavy equipment as recommended by the VCAPCD in its *Ventura County Air Quality Assessment Guidelines*:

- Minimize equipment idling time <u>to no more than 5 minutes, as required in Title 13, CCR §2485, §2449(d)(2), respectively. The idling limit does not apply to: (1) idling when queuing; (2) idling to verify that the vehicle is in safe operating condition; (3) idling for testing, servicing, repairing or diagnostic purposes; (4) idling necessary to accomplish work for which the vehicle was designed (such as operating a crane); (5) idling required to bring the machine system to operating temperature, and (6) idling necessary to ensure safe operation of the vehicle.</u>

- Maintain equipment engines in good condition and in proper tune as per manufacturer's specifications.

- Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.

- Use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, if feasible.

Timing/Implementation: During construction activities

Enforcement/Monitoring: City of Moorpark Community Development Department

Please also refer to Section 3.0, Revisions to the Draft EIR, Section 3.2, Air Quality.

Response to Comment A-VCAPCD-2-13

Comment noted. All Health Risk Assessment (HRA) modeling files were provided to the VCAPCD on April 5, 2022 and no further comment has been received.

Response to Comment A-VCAPCD-2-14

The commenter:

A) States that the impact analysis methodology used to determine the operational criteria pollutant air quality impact of the proposed Specific Plan (under Impact AQ-2 on Draft EIR pages 3.2-25 through 3.2-30) to be significant and unavoidable is not common practice. The commenter recommends analyzing the proposed Specific Plan's operational criteria pollutant emissions as a whole (mobile and stationary emissions combined).

B) Recommends including mitigation measures to mitigate total impacts in excess of the significance threshold, but not separating mitigation measures by emission source. The commenter states that feasible and quantifiable mitigation measures could be proposed for the Specific Plan prior to requiring contribution to the City of Moorpark Transportation System Management (TSM) Fund (per Mitigation Measure [MM] AQ-3 on pages 3.2-38 and 3.2-39 in Section 3.2, *Air Quality*) of the Draft EIR), such as installing a certain quantity of electric vehicle charging stations within the Specific Plan area for future residents, installing bicycle racks on all proposed lots, providing a shuttle service to major nearby destinations, providing bicycle lanes to connect to the existing roadway system, and requiring landscaping equipment to be electric. The commenter states that after the remaining emissions are mitigated through contribution to the City of Moorpark TSM Fund, the impact would be less than significant, and a significant and unavoidable impact would not occur.

C) Recommends updating the reactive organic compounds (ROC) emissions factor for consumer products used in the air pollutant emissions modeling to be consistent with the emission factor for consumer paint thinners and multi-purpose solvents as published in South Coast Air Quality Management District (SCAQMD) Rule 1143.

A – Impact Analysis Methodology

In accordance with the Ventura Quality Air Pollution Control District (VCAPCD) *Air Quality Assessment Guidelines* (2003), the operational criteria pollutant emissions of the proposed Specific Plan were analyzed as a whole by calculating total combined (area, energy, and mobile source) emissions and comparing these total emissions estimates to the VCAPCD-recommended thresholds of 25 pounds per day for ROC and nitrogen oxides (NO_x). As shown in Table 3.2-9 in Section 3.2, *Air Quality*, of the Draft EIR, total combined operational emissions of ROC upon buildout of the proposed Specific Plan were found to exceed the threshold. As a result, the Draft EIR proposed mitigation for this impact, specifically MM AQ-3, which requires contribution to the City of Moorpark TSM Fund to offset the mobile source emissions generated by buildout of the proposed Specific Plan. No feasible stationary emissions mitigation was identified in the Draft EIR.

B – Impact Mitigation Measures

Pursuant to CEQA Guidelines Section 15041(a), the City of Moorpark as the CEQA lead agency has the authority to require feasible changes in any or all activities involved in the Specific Plan in order to substantially lessen or avoid significant effects on the environment, consistent with applicable California constitutional requirements, such as the "nexus" and "rough proportionality" standards established by case law. As further clarified in CEQA Guidelines Section 15126.4(4)(A-B), there must be an essential nexus (i.e., connection) between the mitigation measure and a legitimate governmental interest, and the mitigation measures must be "roughly proportional" to the impacts of the Specific Plan. In addition, as outlined in CEQA Guidelines Section 15126.4(a)(2), mitigation measures must be fully enforceable through permit conditions, agreements, or other legally binding instruments.

Given the requirements of CEQA outlined above, mitigation measures for air quality impacts should address the specific emission sources that result in an exceedance of the significance threshold in proportion to their contribution to the impact. In this case, ROC emissions associated with the proposed Specific Plan are comprised primarily of stationary (i.e., area source) emissions (27 pounds per day) and mobile source emissions (14 pounds per day). As discussed in Section 3.2.7, *Level of Significance after Mitigation*, in Section 3.2, *Air Quality*, of the Draft EIR, MM AQ-3 would mitigate the Specific Plan's mobile source emissions through contribution to the City of Moorpark TSM Fund in an amount equivalent to offset 14 pounds of mobile ROC emissions per day. This mitigation measure meets both the nexus and rough proportionality standards established by CEQA case law and would reduce the Specific Plan's mobile source criteria pollutant emissions to net zero, as stated in Section 3.2.7, *Level of Significance after Mitigation*, in Section 3.2, *Air Quality*, of the Draft EIR. Requiring an additional contribution to the City of Moorpark TSM Fund to mitigate the Specific Plan's area source emissions would not meet the nexus standard under CEQA, because there is not a clear connection between the Specific Plan's area source emissions (e.g., emissions generated by architectural coatings, consumer products, and landscaping equipment) and payment into a fund that reduces Moorpark's citywide mobile source emissions. Therefore, the City, in its role as CEQA lead agency, has decided to take a conservative approach in its analysis of the Specific Plan's operational criteria pollutant air quality impact and conclude that this impact would be significant and unavoidable because feasible mitigation is not available to reduce the Specific Plan's remaining area source emissions of ROC (27 pounds per day) to a level below the VCAPCD-recommended threshold of 25 pounds per day.

The City appreciates the suggestions made by the commenter for potential mitigation measures to address the proposed Specific Plan's operational air quality impact. However, the City, in its role as CEQA Lead Agency, has determined that there is not substantial evidence regarding the effectiveness of installing additional electric vehicle charging stations and bicycle racks for residential units within the Specific Plan

area beyond those already required by the California Building Code in order to conclude that operational criteria pollutant impacts specific to area source emissions (and, thus, overall emissions) would be less than significant. Although the installation of additional electric vehicle charging stations and bicycle racks would facilitate future residents' use of electric vehicles and bicycles, it does not guarantee a certain number of residents would purchase and use electric vehicles and/or bicycles beyond those already assumed in the unmitigated emissions estimate for the Specific Plan's mobile source emissions. The Specific Plan's mobile source emissions estimate is based on the California Air Resources Board's EMissions FACtor (EMFAC) 2017 database which alreadyincorporates the assumption that a certain proportion of vehicle miles traveled would be made by electric vehicles in the year of Specific Plan buildout due to evolving market trends and consumer adoption. Therefore, calculating emissions reductions for these suggested mitigation measures would be speculative, because their operational effectiveness cannot be guaranteed or enforced at the resident or consumer level. Similarly, suggested mitigation measures to provide a shuttle service and/or bicycle lanes would expand future residents' opportunities to utilize alternative transportation options; however, quantifying the criteria pollutant emissions reductions achieved by these features would also be speculative, because the City cannot guarantee a certain level of usage of these features by future residents. As a result, the City has determined that the contribution of the applicant for the proposed Specific Plan to the City of Moorpark TSM Fund in accordance with VCAPCD guidance is the most effective and enforceable means of mitigating the operational air quality impact of the proposed Specific Plan, even if not to a less-than-significant level. Furthermore, as stated in Section 3.2.7, *Level of Significance after Mitigation*, in Section 3.2, *Air Quality*, of the Draft EIR, the City does not have the authority to regulate future residents' use of certain types of landscaping equipment through the Specific Plan. As the commenter suggests, the Homeowners' Association may have a mechanism to require the use of electric landscaping equipment within the Specific Plan area, however there would be no way to quantify the reductions resulting from the use of this equipment, and further, the on-going enforcement of this requirement would be difficult at best, requiring a body of 'deputized' members of the HOA to monitor their neighbors in their own backyards.

C – Emissions Factor Utilization

The City appreciates the commenter's suggestion to utilize a different, lower emissions factor for consumer products based on SCAQMD Rule 1143. However, although usage, production, and consumption of consumer products may be similar when comparing SCAQMD and VCAPCD jurisdictions, data is not readily available to substantiate this assumption, and the VCAPCD has not yet adopted a rule or regulation comparable to SCAQMD Rule 1143 to require a lower ROC content for such products. Should the VCAPCD choose to adopt a comparable rule or regulation to SCAQMD Rule 1143, area source emissions associated with Specific Plan buildout would be lower than those estimated and analyzed in the Draft EIR. However,

at this time, the City cannot guarantee that the specifications of consumer products utilized by future residents of the Specific Plan area would be consistent with the lower emission factor contained in SCAQMD Rule 1143 as recommended for use by the commenter. Instead, the City has chosen to utilize the higher, default value provided by the statewide California Emissions Estimator Model to quantify area source criteria pollutant emissions in order to provide a conservative estimate of the air quality impacts of the proposed Specific Plan. As a result, the City of Moorpark, as the CEQA lead agency, has determined that the operational criteria pollutant air quality impact of the proposed Specific Plan remains significant and unavoidable, as concluded in Section 3.2, *Air Quality*, of the Draft EIR.

A-VCFD-1

From: Williams, Larry <Larry.Williams@ventura.org>
Sent: Friday, April 01, 2022 1:25 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Cc: Williams, Larry <Larry.Williams@ventura.org>; Cagley, Corina <Corina.Cagley@ventura.org>; Amaro, Carlos <carlos.amaro@ventura.org>; Hernandez, Alejandro <Alejandro.Hernandez@ventura.org>; VandenBossche, Marnel <Marnel.VandenBossche@ventura.org>
Subject: Hitch Ranch Specific Plan DEIR - VCFD Response and Comments & VCFD Development Conditions Memo

Hello Doug,

Please see the attached DEIR comments and our conditions memo. 1

Please contact myself or Carlos if you have any questions.
Regards,

Larry G. Williams,

A-VCFD-1

VENTURA COUNTY
FIRE DEPARTMENT

Fire Prevention Supervisor
Fire Hazard Reduction Program Manager
Fire Prevention Bureau
165 Durley Avenue
Camarillo, CA 93010
(805) 947-8543, Fax (805) 388-4356
larry.williams@ventura.org FHRP@ventura.org

Letter VCFD-1 Ventura County Fire Department

Response to Comment VCFD-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

A-VCFD-2

VENTURA COUNTY FIRE DEPARTMENT

Dustin Gardner
Fire Chief
165 Durley Avenue, Camarillo, CA 93010-8586

Website: VCFD.org
Twitter: @VCFD
Facebook: @VenturaCountyFire
Instagram: @VenturaCountyFire

March 30, 2022

City of Moorpark
Doug Spondello, Planning Manager
799 Moorpark Avenue
Moorpark, CA 93021

Subject: Hitch Ranch Specific Plan DEIR

Thank you for the opportunity to review and comment on DEIR for this project. Attached are the Ventura County Fire Department comments and suggested edits. 1

For questions regarding this letter, please contact me at 805-947-8543 or larry.williams@ventura.org

Regards,

Larry G. Williams, Fire Prevention Supervisor
Fire Hazard reduction Program Manager
Fire Prevention Division

C: Massoud Araghi, County Fire Marshal
Attachments: Hitch Ranch DEIR - VCFD Comments

Hitch Ranch Specific Plan DEIR
Ventura County Fire Department Comments and suggested edits:

A general note regarding the use of "Ventura County Fire Protection District (VCFPD)" and the "Ventura County Fire Department (VCFD)". Except for legal documents and ordinance citations, the reference should be the "Ventura County Fire Department (VCFD)".

DEIR:
Section 3.8 Hazards and Hazardous Materials
Page 3.8-2 State Regulations:
Add:
Board of Forestry and Fire Protection
The project is located within a Local Responsibility Area (LRA) Very High Fire Severity Zone (VHFHSZ) and shall comply with the minimum standards of the California Code of Regulations, Title 14, Division 1.5, Chapter 7, Article 6, Subchapter 2, "SRA/VHFHSZ Fire Safe Regulations" (CCR T-14 FSR), unless modified by more restrictive local ordinances and requirements. These regulations are enforced by the local fire authority – Ventura County Fire Protection District.

Page 3.8-4 Ventura County Fire Protection District.
Revises as follows:
The Proposed Project will be subject to requirements of the Ventura County Fire Department (VCFD), which enforces State and local standards for water supplies, access, hazard abatement and fire protection. CCR T-14 FSR, VCFPD Ordinance 29 and 31, VCFPD Standard 501, set standards for these items including the requirement for secondary access.

2

Delete reference to VCFD Standard 14.6 which is been retired and is no longer the correct reference.

City of Moorpark
Goal 6, Policy 6.1: Change reference to Ventura County General Plan to City of Moorpark General Plan.

Page 3.8-15
Sec 3.8.3.2 Fire Hazards, 4th paragraph: Change wording "high fire hazard areas" to "Hazardous Fire Areas". Reason: High fire hazard refers to a specific Fire Hazard Severity Zone under State definition and maps (moderate, high, very high). VCFPD has defined what is a "Hazardous Fire Area", which includes the remainder of the sentence.

Page 3.8-27 Under Less Than Significant paragraph: Change wording "high fire hazard area" to "Hazardous Fire Area". Same reason noted above.

Page 3.8-28
Operational Impacts, 3rd sentence: Change wording" According to the Fire Protection Division of the Ventura County Fire Department (VCFD)" to read "According to the Ventura County Fire Department (VCFD)".

Anticipated Frequency... paragraph: Change wording "high fire hazard area" to "Hazardous Fire Area". Same reason noted above.

Page 3.8-29 Sec 3.8.8.1 Standard Conditions and Regulatory Requirements:
2nd Bullet: Change turning radius to read:" a minimum inside turning radius of 50 feet.
Add after VCFPD Ordinance reference: and CCR T-14 FSR.

Page 3.8.30 2nd Bullet: Add after VCFPD Ordinance reference: and CCR T-14 FSR.

Section 3.13 Public Services:

Page 3.13-1 California Fire Code:
Correct reference to Chapter 33 of CCR should read: Chapter 33 of the California Fire Code (CFC).

2

Page 3.13-2 Sec 3.13.2.1 Existing Conditions:
Please clarify what is considered "response time". Total response time includes: call receipt and processing, station alerting (tone-out), station turnout time from receipt of the alert to actual leaving the station, and travel time to the incident location.
Page 13.13-3
5th paragraph under Standards: Change wording" According to the Fire Protection Division of the Ventura County Fire Department (VCFD)" to read "According to the Ventura County Fire Department (VCFD)". Change wording "high fire hazard area" to "Hazardous Fire Area". Same reason noted above.

Emergency Assistance, 2nd sentence: Clarify what are the 37 VCFD facilities countywide? VCFD has 33 fire stations.

Page 3.13-4 2nd paragraph: Change wording" According to the Fire Protection Division of the Ventura County Fire Department (VCFD)" to read "According to the Ventura County Fire Department (VCFD)".

Page 3.15-5 Staffing Needs: Change "Fire Prevention Services" to read "Fire Protection Services"

Page 3.13-6 Response Distance / Time: Please clarify what is considered "response time". Total response time includes call receipt and processing, station alerting (tone-out), station turnout time from receipt of the alert to actual leaving the station, and travel time to the incident location.

Anticipated Frequency... paragraph: Change wording "high fire hazard area" to "Hazardous Fire Area". Same reason noted above.

Page 3.13-7 Standard Conditions and Requirements:
2nd Bullet: Change turning radius to read:" a minimum inside turning radius of 50 feet.

Page 3.13-8 Last bullet: Change to read:
The developer shall provide Fuel Modification Zone (FMZ) and or Landscape plans prepared by a licensed landscape architect to VCFD for review and approval as follows:

A. Tracts and multiple lot projects: Plans shall be submitted for approval before the start of construction. This includes slopes, common areas, and individual lot landscaping install by the developer.

B. Individual Parcels: Plans shall be submitted for approval prior to installation and or modification of any vegetation / landscape. This includes owner installed landscaping after original purchase of a parcel or building from the developer.

2

The use of drought-tolerant, ignition resistant, native vegetation shall be incorporated into the landscape/fuel modification plans. Plants and trees listed on the VCFD Prohibited Plant List shall not be used.

Section 3.18 Wildfires
Page 3.18-10 1st paragraph: Delete the word "contract". Reason: The city does not contract for fire services. They are included in the Fire Protection District.

Page 3.18-16: Remove International Fire Code and International Wildland-Urban Interface Code sections. These are not any federal, state or local laws and regulations.

Page 3.18-17: California Health and Services Code:
Correct title should read California Health and Safety Code. Change title and reference in the paragraph.
Remove last sentence in this paragraph regarding state owned or occupied building as it does not pertain to this project.

California Public Resources Code:
3rd paragraph: PRC 4291 is not applicable within LRA. Remove and replace with Government Code Section 51182 which is for LRA Very High FHSZ. Note: Changed to GC 51182 were made by AB 3074 (2019) requiring a 0-5 foot ember-resistant zone around buildings (new building starting Jan 1, 2023 and existing building starting Jan 1, 2024). AB 63(2021) also made some changes that are now in effect.

Page 3.18-18
California Fire Code: Change to recently adopted 2022 edition which will be effective January 1, 2023 and will replace the current 2019 adopted edition.

Title 14 Natural Resources:
Change title to read: California Code of Regulations - Title 14 Natural Resources.
Also include reference to State Fire Safe Regulations - The project is located within a Local Responsibility Area (LRA) Very High Fire Severity Zone (VHFHSZ) and shall comply with the minimum standards of the California Code of Regulations, Title 14, Division 1.5, Chapter 7, Article 6, Subchapter 2, "SRA/VHFHSZ Fire Safe Regulations" (CCR T-14 FSR), unless modified by more restrictive local ordinances and requirements.

Page 3.18-19
Senate Bill 1241: SB 1260 (2019) has updated GC66472.02 regarding required findings. Findings in brief portion needs to be updated.

2

California Emergency Services Act (AB38)
Sate year of the Assembly Bill as they reuse Bill numbers. Do not want to create confusion with AB 38 (2019) regarding residential resale disclosures (home hardening and defensible space).

Page 3.18-20:
Utility Wildfire Mitigation Plans (SB901)
State year of Senate Bill.

Forestry and Fire Prevention: Joint Prescribed Burning Operations (AB 2551):
Delete as not applicable to this project.

Page 3.18-21:
Price Gouging: State year of the Assembly Bill.
Forest Resource: State year of the Senate Bill.

Page 3.18-22:
Section 3.18.2.2 Local:
Remove reference to Ventura County General Plan and Ventura County Municipal Code. They are not applicable within the City.

Page 3.18-23:
County of Ventura General Plan:
Remove section. Not applicable within the City.

Page 3.18-24:
Ventura County Municipal Code:
Remove section. Not applicable within the City.

Page 3.18-26:
3rd paragraph:
Change County's development review process to read City of Moorpark development review process.

4th paragraph:
3rd sentence: End sentence after "150 feet in length". Delete remainder of paragraph that continues onto next page.

Page 3.18-27:
1st paragraph, 1st sentence: delete "the County of Ventura".

2

Page 3.18-30:
2nd paragraph: Typical landscape/fuel modification installation for the first 100 feet has changed and the items list are no longer applicable. See VCFD Standard 515 and Guideline 418 for newer requirements.

3rd paragraph:
Typical landscape/fuel modification installation for the first 100 feet has changed and the items list are no longer applicable. See VCFD Standard 515 and Guideline 418 for newer requirements.
Additionally, the project site already has required defensible space maintenance requirement for homes off-site and within 100 feet of the project site. (Northwest area and east area). This needs to be shown on a fuel modification plans.

Figure 3.18-3:
The Conceptual Fuel Modification Plan is outdated due to changes in State and Local laws and regulations and should be updated.

Page 3.18-32:
1st paragraph: The full 100 foot defensible zone from project buildings is required by VCFPD Ordinance. Any portion off-site will be the responsibility of that affected property owner. VCFD is proposing a development condition to have this project be responsible

for the portion of the 100 foot zone off-site until such time the affected off-site properties develop.

2nd paragraph: Landscape and fuel modification plans are required to be submitted to VCFD for review and approval. This includes developer install landscaping and any landscape installed by individual property owners.

Page 3.18-33:
Post-Project Conditions:
Change FMZ Zone designations to Zone identifiers listed in VCFD Standard 515. (Zones 0,1,2 &3).

Page 3.18-38:
3rd paragraph: See comment for page 3.18-32 above as it applies to this paragraph too.

Page 3.18-39 Road Width and Circulation
1st paragraph: Delete portion of sentence referencing one-way road widths. There are none proposed for the project. Last sentence. Revise. Required turning radius 50 foot inside radius per CCR T-14 FSR.

2

Page 3.18-40:
Continued paragraph from previous page: change mowing of grasses to 6-inched to read 3-inches (VCFD Standard).

Page 3.18-45:
2nd paragraph: Remove reference to County Municipal Code, County Code requirements and City of Moorpark Fire Code..
Page 3.18-46:
2nd Bullet: Change FMZ Zone designations to Zone identifiers listed in VCFD Standard 515. (Zones 0,1,2 &3).

Page 3.18.48:
2nd bullet: Use of vining plants may be restricted in Zones 0,1 & 2).

WF-3: Landscape and fuel modification plans are required to be submitted to VCFD for review and approval. This includes developer install landscaping and any landscape installed by individual property owners. Recommend not including current Prohibited Plan List and Plant reference guide unless you add notation that they may be updated and the current versions must be used when designing and submitting landscape / fuel modification plans.

Page 3.18-49:
WF-4: The VCFD does not currently require annual 3rd party certifications. VCFD conducts annual inspection to determine compliance.

Appendix 3.18 Wildfire Protection Plan:

Page vii: 1st Bullet: Change FMZ Zone designations to Zone identifiers listed in VCFD Standard 515. (Zones 0,1,2 &3). The VCFD does not currently require annual 3rd party certifications. VCFD conducts annual inspection to determine compliance.

Page 2:
1.1.2 Change FMZ Zone designations to Zone identifiers listed in VCFD Standard 515. (Zones 0,1,2 &3).

Page 18:
Section 3, 2nd paragraph: Change VCFPD Ordinance from #30 to #31 (or current adopted ordinance). Add reference to CCR T-14 FSR as they are applicable effect July 1, 2021.

Page 19:
4th paragraph, 3rd sentence: Remove "although the Fire Code Official is authorized to increase the length of a dead-end fire apparatus access roadway to a length of 250 feet". This is incorrect. Change reference to 40-foot turning radius to a 50 foot inside turning radius per CCR T-14 FSR. Delete reference to one-way traffic road width of 20 feet. There are no one-way roads proposed and that is a special use approval needed.

2

Page 20:
2nd paragraph: Call data should be updated to most current available due to development since 2017.

Page 23:
Change FMZ Zone designations to Zone identifiers listed in VCFD Standard 515. (Zones 0,1,2 &3).

Page 29:
Table 5:
It appears the Maximum Travel Distance and Travel Time figures are reversed for Station 40 and 42.

Sec 5.2:
2nd paragraph: Call data should be updated to most current available due to development since 2017.

Page 32:
6: New state and local building and fire codes will be in effect January 1, 2023.
6.1.1:
Last bullet: Delete reference to one-way traffic road width of 20 feet. There are no one-way roads proposed and that is a special use approval needed.

Page 33:
Continuing paragraph from prior page and 2nd Bullet: 20 tons is 40,000 pounds. However current fire apparatus can exceed 40,000 pounds. All roads shall be design for the weight load requirements of the CA Vehicle Code, City Road Standards, or 75,000 pounds, whichever is more restrictive.

1st Bullet: Remove "although the Fire Code Official is authorized to increase the length of a dead-end fire apparatus access roadway to a length of 250 feet". This is incorrect.

Page 34:
6.1.3: 3rd sentence: Remove the fourth word "no". 4th sentence: Remove "although the Fire Code Official is authorized to increase the length of a dead-end fire apparatus access roadway to a length of 250 feet". This is incorrect.

2nd paragraph: Change reference to 40-foot turning radius to a 50 foot inside turning radius per CCR T-14 FSR. 2

Page 35:
6.2: 2nd paragraph: There are 3 basic wildfire exposures concerns for structure ignition: 1) Embers, 2) Radiant heat, and 3) direct flame contact.

Page 36:
1st paragraph continuing from previous page: Change reference to VCFPD Ordinance 30 to 31.

Item #2. Last sentence: Who is SMFD? This should be SFM and CBC Chapter 7A.

Item #4: All buildings require automatic fire sprinklers in accordance with CFC and VCFPD Ordinance.

Page 37:
6.6.1: Landscape and fuel modification plans are required to be submitted to VCFD for review and approval. This includes developer install landscaping and any landscape installed by individual property owners.

Page 38:
1st paragraph: Change FMZ Zone designations to Zone identifiers listed in VCFD Standard 515. (Zones 0,1,2 &3).
The full 100 foot defensible zone from project buildings is required by VCFPD Ordinance. Any portion off-site will be the responsibility of that affected property owner. VCFD is proposing a development condition to have this project be responsible for the portion of the 100 foot zone off-site until such time the affected off-site properties develop.

6.6.1.1 starting page 38 and continuing to page 40: Change FMZ Zone designations to Zone identifiers listed in VCFD Standard 515. (Zones 0,1,2 &3). It would be okay to describe the zones and purpose but remove Table 6 and additional FMZ requirements. These have been revised and will undergo additional revision after adoption of State Regulations for Zone 0,1 & 2 current in process and due for adopt by January 1, 2023.

Page 40:
Change 6-inches to 3-inches.

Page 41:
Stormwater Basins: Any portion of the basin that is within 100 feet of a structure will be required to comply with the full regulation for defensible space.

2

Special Fuel Management Issues:
2nd and 4th bullets: Trees will need to comply with VCFD Standard 515 when located within Zone 0,1 and 2.

Page 42:
Continuing paragraph from previous page and Undesirable Plants section: Recommend not including current Prohibited Plan List and Plant reference guide unless you add notation that they may be updated, and the current versions must be used when designing and submitting landscape / fuel modification plans. Also, should add: No Invasive pants be installed.

Page 43:
6.6.3: The VCFD does not currently require annual 3rd party certifications. VCFD conducts annual inspection to determine compliance.

6.6.4: See VCFPD Ordinance 31, Appedix V for fire safety requirements in Hazardous Fire Areas that will be applicable during construction. Use of equipment, spark arrestors, cutting/grinding and spark producing items, etc.

Figure 5 - The Conceptual Fuel Modification Plan is outdated due to changes in State and Local laws and regulations and should be updated.

Page 59:
References:
VCFPD Unit Fire Plan. 2011. Is this a typo and should read 2021? If not, need to update to current 2021 and change any outdate information that was based upon the 2011 plan.

VCFPD Standard 515. This was update February 15, 2022.

2

Appendix D:
Title is incorrect. VCFD does not have a suggested Plant list. We have a Plant Reference Guide. Please read the onto on page 2 of the guide. This guide is schedule for revision sometime during 2022/2023.

Appendix E:
This guide is schedule for revision sometime during 2022/2023.

Letter VCFD-2 Ventura County Fire Department

Response to Comment VCFD-2-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment VCFD-2-2

Comments noted.

Revisions have been made in the Final EIR reflecting the requested revisions to information. Please refer to Section 3.0, Revisions to the Draft EIR, Section 3.8, Hazards and Hazardous Materials, Section 3.13, Public Services, and Section 3.18, Wildfire.

A-VCFD-3

Ventura County Fire Department

MEMORANDUM

DATE:	March 31, 2022
TO:	Douglas Spondello, Planner
AGENCY:	City of Moorpark Planning Dept.
FROM:	Carlos Amaro, Fire Inspector
FIRE DEPT. ID	FPLN19-00333
APPLICANT:	Comstock Homes
LOCATION:	0 North Hills Parkway, Moorpark / 511-0-020-110
DESCRIPTION:	Hitch Ranch Specific Plan 2019-01, TTN-5708, Development Agreement 2019-01, General Plan Amendment, Zone Change

The following are the Fire Department conditions for Phase One of this project and are subject to change if the project is revised. Any previously issued conditions are null and voided.

1

State Fire Safe Regulations - The project is located within a Local Responsibility Area (LRA) Very High Fire Severity Zone (VHFHSZ) and shall comply with the minimum standards of the California Code of Regulations, Title 14, Division 1.5, Chapter 7, Article 6, Subchapter 2, "SRA/VHFHSZ Fire Safe Regulations" (CCR T-14 FSR), unless modified by more restrictive local ordinances and requirements.

Access Road Width, Private Roads and Driveways - Private roads shall comply with Public Road Standards. 2.5-foot wide easements shall be provided on each side of any private access road/driveway to allow for curbs and fire lane signage.

- Access road width of 36 feet shall be provided for residential use with parallel parking permitted on both sides.
- Access road width of 32 feet shall be provided for residential use with parallel parking permitted on one side.
- Access road width of 24 feet shall be required with no on-street parking permitted, or per Public Road Standards whichever is stricter.
- Driveways serving up to two (2) single family dwellings shall have a minimum clear

width of 15 feet with no parking along the common portion serving the two (2) dwellings.

Construction Access - Prior to combustible construction, a paved all-weather access road / driveway suitable for use by a 20-ton Fire Department vehicle shall be installed at locations approved by the Fire Department. A minimum 20-foot clear width shall remain free of obstruction during any construction activities within the development once combustible construction starts.

Construction Access Utilities - Prior to combustible construction, all utilities located within the access road and the first lift of the access road pavement shall be installed.

Turning Radius FHSZ - All access roads and driveways shall be of sufficient width to allow for a 50-foot inside turning radius at all turns in the road or driveway.

Vertical Clearance - All access roads / driveways shall have a minimum vertical clearance of 13 feet 6 inches (13' 6"). Clear of building to sky.

Access Road and Driveway Grade – All access roads and driveways shall not exceed a 16% grade.

Vertical Curve - The vertical curve of a road or driveway shall not allow for transitions between grades that exceed 6% elevation change along any 10 foot section. These transitions shall include; angle of approach, angle of departure and high centering of fire apparatus.

Turnarounds - Approved turnaround areas for fire apparatus shall be provided when dead-end Fire Department access roads / driveways exceed 150 feet. Turnaround areas shall not exceed a 5% cross slope in any direction and shall be located within 150 feet of the end of the access road / driveway. Turnaround areas shall not be used for parking and shall be kept free of obstructions at all times. Turnaround areas shall be posted as Fire Lanes in accordance with Fire Department Fire Lane Standards.

Parking Prohibited - The property owner(s) are hereby advised that parking on access roads / driveways and fire department turnarounds is prohibited.

Access Road Location - The access / driveway shall be extended to within 150 feet of all portions of the exterior walls of the first story of any building and shall be in accordance with Fire Department access standards. Where the access roadway cannot be provided, approved fire protection system or systems shall be installed as required and acceptable to the Fire Department.

Site Access - Two (2) separate means of ingress/egress shall be provided to all areas the development in accordance with CCR T-14 FSR and Fire Department access standards. Required secondary ingress/egress (secondary access) shall be provided and maintained at all times starting with the first occupancy of any building within the project area. This includes within each Planning Area and the project area as a whole. If the required secondary access travels through a construction area, provisions shall be implemented to separate the construction area such that the required secondary access in available through the construction area at all times, day and night. Dead-end roads

shall not exceed 800 feet.

Private Access Road and Driveway Certification - That the access road(s)/driveway(s) shall be certified by a registered civil engineer as having an all-weather surface in conformance with Public Works and / or Fire Department standards. This certification shall be submitted to the Fire Department for review and approval prior to occupancy.

Fire Lanes / Access Review (Submit prior to issuance of the first fire department clearance to start construction) - the applicant shall submit two (2) site plans to the Fire Department for review and approval of access road / driveways and location of fire lanes. **Prior to occupancy,** all fire lanes shall be posted "NO PARKING-FIRE LANE-TOW AWAY" in accordance with California Vehicle Code, the International Fire Code and current VCFD Fire Lane Standards. All signs and or Fire Lane markings shall be within the public right a way or recorded access easements.

Traffic Calming / Speed Control Devices: Any proposed traffic calming or speed control devices (speed humps, pillows, etc) require approval of the fire department prior to installation. Speed bumps are prohibited.

Access Road Gates - Any gates to control vehicle access are to be located to allow a vehicle waiting for entrance to be completely off the intersecting roadway (minimum 40 foot setback). A minimum clear open width of 15 feet in each direction shall be provided for separate entry / exit gates and a minimum 20 for combined entry / exit gates. Roadway spikes of any type are prohibited. If gates are to be locked, a Knox system shall be installed. The method of gate control, including operation during power failure (battery back-up), shall be subject to review by the Fire Prevention Division. Gate plan details shall be submitted to the Fire Department for approval prior to installation. A final acceptance inspection by the Fire Department is required prior to placing any gate into service.

Road / Street Name Required - Public and private roads shall be named if serving more than four (4) parcels or as required by the Fire department.

Street Names - Prior to recordation of street names, proposed names shall be submitted to the Fire Department's Fire Prevention Bureau for review and approval.

Walkways - Approved walkways shall be provided from all building openings to the public way or fire department access road / driveway.

Walk and Pedestrian Gates - If gates are to be locked, a Knox system shall be installed. The method of gate control, including operation during power failure (battery back-up), shall be subject to review by the Fire Prevention Division. Gate plan details shall be submitted to the Fire Department for approval prior to installation. A final acceptance inspection by the Fire Department is required prior to placing any gate into service.

Address Numbers (Commercial, Industrial, Multi-family buildings) - Building address numbers, a minimum of ten inches (10") high, shall be installed prior to occupancy, shall be of contrasting color to the background, and shall be readily visible at night. Brass or gold-plated numbers shall not be used. Where structures are set back more than 150 feet from the street, larger numbers will be required so that they are distinguishable from the street. In the event a structure(s) is not visible from the street, the address number(s)

shall be posted adjacent to the driveway entrance on an elevated post. Individual unit numbers shall be a minimum of 4 inches in height and shall be posted at the front and rear entrance to each unit. Additional address directional signs may be required at common building entrances and stairways.

Address Numbers (Single Family Homes) - Address numbers, a minimum of 4 inches (4") high, shall be installed prior to occupancy, shall be of contrasting color to the background, and shall be readily visible at night. Brass or gold-plated numbers shall not be used. Where structures are set back more than 150 feet (150') from the street, larger numbers will be required so that they are distinguishable from the street. In the event the structure(s) is not visible from the street, the address number(s) shall be posted adjacent to the driveway entrance on an elevated post.

Address Number Plan - A plan shall be submitted to the Fire Department for review indicating the method in which buildings are to be identified by address numbers.

Fire Hydrant Plan - Prior to construction, the applicant shall submit plans to the Fire Department for placement of fire hydrants. On plans, show existing hydrants within 500 feet of the development. Indicate the type of hydrant, number and size of outlets.

Fire Hydrant(s) Required - Fire hydrant(s) shall be provided in accordance with current adopted edition of the Ventura County Fire Code, Appendix C and adopted amendments. On-site fire hydrants may be required as determined by the Fire Department. Fire hydrants shall be installed along any road adjacent to Wildland fuels, at locations determined by the Fire Department.

Fire Hydrant Design (Commercial, Industrial, Multi-family buildings) - Fire hydrants shall be installed and in service prior to combustible construction and shall conform to the minimum standard of the City of Moorpark Water Works Manual and the following.

a. Each hydrant shall be a 6 inch wet barrel design and shall have (1) 4 inch and (2) 2 ½ inch outlet(s).
b. The required fire flow per VCFC Appendix B shall be achieved at no less than 20-psi residual pressure.
c. Fire hydrants shall be spaced 300 feet on center and so located that no structure will be farther than 150 feet from any one hydrant.
d. Fire hydrants shall be set back in from the curb face 24 inches on center.
e. No obstructions, including walls, trees, light and signposts, meter, shall be placed within three (3) feet of any hydrant.
f. A concrete pad shall be installed extending 18 inches out from the fire hydrant.
g. Ground clearance to the lowest operating nut shall be between 18 to 24 inches.

Fire Hydrant Design (Single Family Homes) - Fire hydrants shall be installed and in service prior to combustible construction and shall conform to the minimum standards of the City of Moorpark Water Works Manual and the following.

a. Each hydrant shall be a 6-inch wet barrel design and shall have one (1) 4 inch and one (1) 2 ½ inch outlet.
b. The required fire flow of 1000 gpm shall be achieved at no less than 20-psi

residual pressure.

c. Fire hydrants shall be spaced 500 feet on center, and so located that no structure will be farther than 250 feet from any one hydrant.
d. Fire hydrants shall be set back from the curb face 24 inches on center.
e. No obstructions, including walls, trees, light and signposts, meter, shall be placed within three (3) feet of any hydrant.
f. A concrete pad shall be installed extending 18 inches out from the fire hydrant.
g. Ground clearance to the lowest operating nut shall be between 18 to 24 inches.

Fire Hydrant Installation - Prior to combustible construction on any parcel, a fire hydrant capable of providing the required fire flow and duration shall be installed and in service along the access road / driveway at a location approved by the Fire Department. The owner of the combustible construction is responsible for the cost of this installation.

Fire Hydrant Protection – The developer shall implement measures approved by the Fire Department to prevent obstruction of fire hydrants during construction.

Hydrant Location Markers - Prior to occupancy of any structure, blue reflective hydrant location markers shall be placed on the access roads in accordance with Fire Department standards. If the final asphalt cap is not in place at time of occupancy, hydrant location markers shall still be installed and shall be replaced when the final asphalt cap in completed.

Fire Flow - The minimum fire flow required shall be determined as specified by the current adopted edition of the Ventura County Fire Code Appendix B with adopted Amendments and the applicable Water Manual for the jurisdiction (with ever is more restrictive). The applicant shall verify that the water purveyor can provide the required volume and duration at the project prior to obtaining a building permit.

Water System Plans – Plans for water systems supplying fire hydrants and / or fire sprinkler systems and not located within a water purveyor's easement, shall be submitted to the Fire Department for review and approval prior to issuance of grading and/or building permits or signing of Mylar plans, whichever is first. Plans shall reflect only dedicated private fire service lines and associated appurtenances. Plan shall be design in accordance with VCFD Standards and submitted with the appropriate fees.

Fire Sprinklers - All structures, including any future Accessory Dwelling Units (ADU), shall be provided with an automatic fire sprinkler system in accordance with current VCFPD Ordinance at time of building permit application.

Fire Protection System Plans - Plans for all fire protection systems (sprinklers, dry chemical, hood systems, etc.) shall be submitted, with payment for plan check, to the Fire Department for review and approval prior to installation. Note: Fire sprinkler systems with 6 or more heads shall be supervised by a fire alarm system in accordance with Fire Department requirements.

Building Plan Review (Submit prior to Building & Safety approval) - Building plans of all A, E, I, H, R-1, R-2 or R-4 occupancies shall be submitted, with payment for plan check, to the Fire Department for review and approval prior to obtaining a building permit.

Hazardous Fire Area - This development is in a Hazardous Fire Area and all structures shall meet hazardous fire area building code requirements. Contact the Building Department for requirements.

Hazard Abatement - Structures All grass or brush exposing any structure(s) to fire hazards shall be cleared for a distance of 100 feet prior to construction of any structure and shall be maintained in accordance with State Law and VCFPD Ordinance. The proposed Hitch Ranch Project will include up to 200 feet of fuel modification in accordance with the approved Fire Protection Plan incorporated within the project's approved EIR and Specific Plan. Provisions shall be made by the applicant to maintain the portion of the existing 100 foot defensible space zone that occurs on this project from existing homes adjacent to the project boundaries.

Hazard Abatement – Off-site. Provisions shall be made by the project applicant to clear and maintain any portion of the required 100-foot defensible space zone that occurs off-site of the project's eastern boundaries until such time those unimproved parcels construct buildings subject to defensible space regulations.

Hazard Abatement – Roads and Driveways All grass and brush shall be cleared to a distance of ten (10) feet on each side of all access roads / driveways.

Fuel Modification Zone and Landscape Plans - The developer shall provide Fuel Modification Zone (FMZ) and or Landscape plans prepared by a licensed landscape architect to VCFD for review and approval as follows:

A. Tracts and multiple lot projects: Plans shall be submitted for approval before the start of construction. This includes slopes, common areas, and individual lot landscaping install by the developer.

B. Individual Parcels: Plans shall be submitted for approval prior to installation and or modification of any vegetation / landscape. This includes owner installed landscaping after original purchase of a parcel or building from the developer.

Spark Arrester - An approved spark arrester shall be installed on the chimney of any structure.

Fire Department Clearance (Submit prior to Building & Safety approval) - Applicant shall obtain VCFD Form #610 "Fire Permit Application" and Form #625 "Fire Flow Verification" prior to obtaining a building permit for any new structures or additions to existing structures.

Phasing Plan - Applicant shall submit a phasing plan to the Fire Department for review and approval prior to construction.

Map Approval - At least 14 days prior to recordation of any maps, including parcel map waivers, the applicant shall submit two copies of the map to the Fire Prevention Division for approval.

Recorded Map - A copy of all recorded maps shall be provided to the Fire Prevention Division within seven (7) days of recordation of said map.

Letter VCFD-3 Ventura County Fire Department

Response to Comment VCFD-3-1

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements, and the VCFD Conditions of Approval.

A-VCPW TD

PUBLIC WORKS AGENCY
TRANSPORTATION DEPARTMENT
Traffic, Advance Planning & Permits Division

M E M O R A N D U M

DATE: April 01, 2022

TO: RMA Planning Division
Attention: Anthony Ciuffetelli

FROM: Glenn Derossett, Engineering Manager III

SUBJECT: **REVIEW OF DOCUMENT**
PROJECT NO.: RMA 22-003

Lead Agency: **City of Moorpark, Community Development**
APN# 511002011

Pursuant to your request, the Public Works Agency -- Roads & Transportation Department has reviewed the subject Draft EIR and feel that it is within our responsibility to provide comments.

The proposed Specific Plan includes the development of 755 residential units, a six-acre public park, associated roadways and infrastructure, as well as expansive open space, detention basins, and manufactured slopes on approximately 277 acres. Units are provided as a mix of single-family and multi-family. Hitch Ranch is generally located north of Poindexter Avenue, west of Casey Road, and extending approximately 1,700 feet to the west of Gabbert Road.

1

We offer the following comments:

1. The VMT analysis contained in the subject project's draft EIR appears to have a reasonable approach, but the assumed shift in mode share due to the project's proximity to the Moorpark Metrolink station appears to be overestimated and the conclusions do not appear to be credible based on VCTC's currently available VMT modeling information.

   VCTC's 2016 base year model by Traffic Analysis Zone (TAZ) indicates that while VMT in the Moorpark area is reduced in the vicinity of the Metrolink station, a reduction of 15% or more only occurs south of State Route 118. The citywide average VMT per capita for Moorpark in the VCTC model 21.33. In the TAZ south of SR 118 and adjacent to the Metrolink station the VMT is 16.91, and 12.61 in the TAZ west of the Metrolink station. However, north of SR 118 the VMT increases to 20.27 and is 25.21 in the TAZ area of the subject project.

   The DEIR traffic analysis uses a different model and does not compare to a Moorpark VMT but to a countywide VMT. Comparing the values cited above to the VCTC model's countywide VMT average of 16.48, only one of the TAZ areas is 15% less than the countywide average and is located south of SR 118.

   2

   The VCTC modeling shows that:

   1. VMT in Moorpark is significantly higher than the countywide average.

   2. SR 118 and the railroad tracks presents a significant obstacle to residents utilizing the Metrolink.

   It is the Ventura County, Public Works Agency, Roads & Transportation's opinion that the analysis for significant VMT impacts in the DEIR is not sufficiently credible to be considered adequate as part of the lead agency's overall evaluation. We suggest that the project's VMT be analyzed with VCTC's model, or a methodology that is quantitative with evidence, and not based on arbitrary assumptions that conflict with available information. VMT mitigation appears to be necessary, should be included in the project, and the mitigation measures selected should show with evidence that they will reduce the project's VMT below a level of significance.

2. Though Level of Service is no longer required to be analyzed as part of CEQA, the City of Moorpark still chose to discuss it in the EIR section 3.15 Transportation. The following comments are based on the fact that the public document discussed LOS, and this is the County of Ventura, Public Works Agency, Roads & Transportation's analysis of the information presented in the EIR.

   Section 3.15 Transportation - California Department of Transportation

   In this section the EIR states, "According to the Guide for the Preparation of Traffic Impact Studies, the existing LOS should be maintained if a freeway facility is currently operating at an unacceptable LOS (e.g., LOS F). A project impact is said to occur if the project degrades LOS from an acceptable to unacceptable level." The Guide for the Preparation of Traffic Impact Studies talks about "State Highways facilities" this includes freeways and highways. In this guide it states that "Caltrans endeavors to maintain a target LOS at the transitions between LOS "C" and LOS "D". However, through the County of Ventura's most current General Plan, the acceptable level of service for State Route 118 in the Unincorporated County is LOS "E".

   State Route 118 west of the City of Moorpark is already at, if not already exceeding, a LOS "E". Any further vehicle trips put on the state highways without proper mitigation will make a project inconsistent with both the State and County of Ventura's policies. The City of Moorpark analyzed the impact the project would have on the road network of the City of Moorpark but failed to analyze the regional impact the project would have to the entire county, including but not limited to, the county and state-maintained roadways and intersections. 3

   If the project is going to analyze the LOS on the city road network, it too should analyze the regional impact the project will have on the county and state road networks, along with any other neighboring cities the project may impact. The County of Ventura, Public Works Agency, Roads & Transportation, for the sake of public transparency and duty to the public to verify that projects do not cause policy inconsistency, urges that a traffic impact analysis be done for the impact the project will have on the state and county road network. In addition, while the impact on the city roadways needs to be mitigated, the impact on the state and county road network should also be conditioned to be mitigated.

Our review is limited to the impacts this project may have on the County's Regional Road Network. Please contact me at 654-2087 if you have questions.

Letter VCPW TD Ventura County Public Works Transportation Department

Response to Comment VCPW TD-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment VCPW TD-2

Please refer to **Response to Comment A-VCTC-2-2** and **Response to Comment A-VCTC-2-3.**

Response to Comment VCPW TD-3

As noted on page 3.15-1 of the Draft EIR, roadway Level of Service (LOS) data is provided in the Draft EIR for informational purposes only since LOS is no longer a threshold/criteria for CEQA analysis. LOS information for key intersections within the City of Moorpark is provided in the Draft EIR in Section 3.10, Land Use, beginning on page 3.10-27. While the operational performance of County and State highways as noted in the comment letter is a matter of regional importance that is affected by many factors, this comment does not fall under the purview of the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

A-VCPW WP

PUBLIC VENTURA COUNTY WORKS

WATERSHED PROTECTION

WATERSHED PLANNING AND PERMITS DIVISION
800 South Victoria Avenue, Ventura, California 93009
Peter Sheydayi, Deputy Director – (805) 650-4077

M E M O R A N D U M

DATE: April 4, 2022

TO: Anthony Ciuffetelli, Planner
County of Ventura

FROM: Sergio Vargas, Deputy Director, Operations and Maintenance SV

SUBJECT: RMA22-003 Hitch Ranch Specific Plan
Watershed Protection (WP) Project Number: WC2022-0014

Pursuant to your request dated February 22, 2022, this office has reviewed the submitted materials and provides the following comments.

PROJECT LOCATION:

Subdivision of approximately 277 acres of property generally located north of Poindexter Avenue, west of Casey Road, and extending approximately 1,700 feet to the west of Gabbert Road, Moorpark, CA.

PROJECT DESCRIPTION:

The proposed Hitch Ranch Specific Plan would provide for the master-planned development of 755 residential homes of various densities and building types, a public park, associated roadways and infrastructure, as well as expansive open space, stormwater detention basins, and manufactured slopes.

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WATERSHED PROTECTION COMMENTS:

1. Watershed Protection has provided several rounds of review for the project and the memo issued on June 30, 2020 (attached) indicated that the proposed mitigation strategy for peak flows is acceptable, but that a funding strategy for Walnut Canyon recapitalization is still lacking.

WATERSHED PROTECTION CONDITIONS:

1. **Mitigation:** The proposed development shall incorporate mitigation measures to address cumulative impacts due to the proposed increase in imperviousness. Project shall not increase peak storm runoff in any frequency of storm events consistent with WP policy and WP-2 Ordinance or, alternatively, apply the city standard; whichever is most restrictive shall apply.

2. **Funding:** The Property Owners will not object to the establishment of a special assessment district to fund drainage system improvements, including but not limited to; technical study development, engineering design, construction, rehabilitation, replacement, and long-term maintenance of the Gabbert/Walnut drainage facilities. The limited hydraulic conveyance and deficiencies are documented in the 2005 Technical Addendum to *Gabbert and Walnut Canyon Channels Flood Control Deficiency Study* by PACE, which has been adopted by the City of Moorpark.

1

If you have any questions, please feel free to contact me by email at Sergio.Vargas@ventura.org or by phone at (805) 672-2106.

END OF TEXT

cc: Glenn Shephard, Director, Watershed Protection

Attachments: Memo, *Hitch Ranch Development in the Gabbert-Walnut Watershed*

PUBLIC VENTURA COUNTY WORKS

county of ventura

Jeff Pratt
Agency Director

Central Services
Joan Araujo, Director

Engineering Services
Christopher Cooper, Director

Roads & Transportation
David Fleisch, Director

Water & Sanitation
Joseph Pope, Director

Watershed Protection
Glenn Shephard, Director

June 30, 2020

Mr. Douglas Spondello
City of Moorpark
799 Moorpark Ave.
Moorpark, CA 93021

SUBJECT: Hitch Ranch Development in the Gabbert – Walnut Watershed

Dear Mr. Spondello,

Thank you for inviting Watershed Protection to participate in the Development Review Committee's review of the Hitch Ranch development project. We have done several reviews of the project under CEQA and as part of our permitting process. At this time, we agree that the project design will meet the mitigation requirements of Watershed Protection and the City, and alleviate some of the concerns about the lack of channel capacity in the Walnut-Gabbert jurisdictional drainage facility. However, we are increasingly concerned as the aging concrete channel system has reached the end of its 50-yr design life, and is experiencing ongoing failures due to its age. The proposed mitigation does not directly address the critical need to replace and upgrade the channel system in the near future to minimize the threats to life and safety and adjacent infrastructure. Therefore, we are proposing that Watershed Protection and the City work together on this issue.

A Walnut-Gabbert channel replacement project has been included in the Integrated Watershed Protection Program list of projects for some years now. However, it competes with all of the other Watershed Protection Zone 3 projects for ranking and funding, some of which are projects on the Arroyo Simi with major impacts on life and safety issues. Therefore, the Walnut-Gabbert Channel replacement project is unlikely to rise to the top of the rankings and be included in our 5-yr Capital Improvement Project planning list in the near future.

From our understanding, the first step in the collaborative process would be to develop a complete picture of the proposed development for the Gabbert/Walnut watershed based on the current General Plan and available Specific Plans. Of interest is the total number of equivalent dwelling units expected within the City of Moorpark that would benefit from the Gabbert-Walnut regional drainage system. Watershed Protection has reviewed the Hitch Ranch Specific Plan as well as other information available on the City's websit;

however, we would like to work with the City to better use the available information and gain a more realistic understanding of proposed and expected future development.

Watershed Protection recommends we develop equitable funding strategies to address the cost involved in designing and constructing the channel replacement. We've performed a planning-level cost estimate for the system recapitalization project, resulting in cost estimate of $29 million for the 4-mile channel project length. Watershed Protection anticipates discussions with the City would result in a funding plan that is acceptable to the City's electorate; whether, it is a development fee attached to new structures in the watershed, a general bond issue for the project, or a drainage assessment, as well as some contributory State grant funding.

We understand this issue will be challenging and request the opportunity to meet with you at your convenience, and look forward to working with you and any interested stakeholders on this project. Please contact me to share your thoughts on this proposal and your ideas for moving ahead.

Sincerely,

Sergio Vargas

Sergio Vargas, P.E.
Deputy Director
Watershed Protection
Watershed Planning and Permits

cc: Glenn Shephard, Director, Watershed Protection

Letter VCPW WP Ventura County Public Works Watershed Protection

Response to Comment VCPW WP-1

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

Further, the project applicant will be entering an agreement with Ventura County Public Works Watershed Protection to establish a special assessment district to fund drainage system improvements, including but not limited to; technical study development, engineering design, construction, rehabilitation, replacement, and long-term maintenance of the Gabbert/Walnut drainage facilities.

A-VCPW WRD

PUBLIC VENTURA COUNTY WORKS

WATERSHED PROTECTION

MEMORANDUM

DATE: March 24, 2022

TO: Anthony Ciuffetelli, Planner, Planning Division

FROM: James Maxwell, Groundwater Specialist, Water Resources Division

SUBJECT: RMA 22-003 – Hitch Ranch Specific Plan

The Ventura County Public Works Agency, Water Resources Division (VCWRD) reviewed the *Draft Environmental Impact Report for the Proposed Hitch Ranch Specific Plan* (DEIR) and associated documents submitted by the City of Moorpark.

PROJECT DESCRIPTION

The proposed development project (Project) area, known as the Hitch Ranch Specific Plan site, will be located on seven parcels encompassing a total of 277.30 acres. The *Hitch Ranch Specific Plan* (Plan) provides for the arrangement of various land uses including residential, open space and recreational use within the Plan area. The project area is in the City of Moorpark and consists of Assessor's Parcel Numbers (APNs) 511-0-020-110, -130, -160, -170, -180, -195 and -245.

The Project is for the development of 755 dwelling units on approximately 92 acres, inclusive of 427 single-family units and 328 multi-family units. A 23.44-acre graded development pad will be donated to the City of Moorpark for future development of affordable family housing under a separate project. Two seven-acre parks are planned. A total combined open space area of greater than 75 acres will be established to comply with City of Moorpark Specific Plan requirements. Grading and manufacturing of artificial slopes, building pads and roadways will take place. Five detention basins totaling 29.91 acres and four debris basins in specific Plan areas will be added, all constructed as soft-bottomed basins and ultimately draining to the Ventura County Watershed Protection District (VCWPD) Walnut Canyon Channel.

1

GROUNDWATER QUANTITY AND WATER SUPPLY

The Project overlies the Las Posas Valley Basin, a high priority basin designated by the Department of Water Resources (DWR) as Basin No. 4-008. The Las Posas Valley Basin is hydrogeologically connected to the Oxnard Subbasin and the Pleasant Balley Basin, both critically-overdrafted basin. The proposed project is located within the Fox Canyon Groundwater Management Agency (FCGMA) area. The FCGMA regulates groundwater extraction allocations for well owners and operators within its boundary.

Ventura County Waterworks District No. 1 (VCWWD-1) will provide water service. The VCWWD-1 water supply consists primarily of imported State Water Project (SWP) water from Calleguas Municipal Water District (CMWD) and groundwater extracted from VCWWD-1 wells. 1

The development of the residential units and supporting roadways will cover 47% of the site area with impervious surfaces, reducing the infiltration area of surface water to recharge underlying aquifers. In February 2020, Kasraie Consulting prepared the *Hitch Ranch Hydrology Study Report 2020 Update* (Appendix 3.9-E of the DEIR). The Report acknowledges that the drainage pattern will not be altered to substantially increase the rate or amount of flood. However, the project would increase the area of impervious surfaces and potentially affect groundwater recharge rates. The Report does not address how the proposed detention basins and drainage would accommodate or mitigate the increase in impervious surface area. The Project area overlies the Las Posas Valley Basin, designated by the DWR as a high-priority basin and is hydrogeologically connected to the Oxnard Subbasin and Pleasant Valley Basin, both critically-overdrafted groundwater basin. The *Groundwater Sustainability Plan for the Las Posas Valley Basin* (FCGMA 2019) maintains that all areas of the Basin are in overdraft relative to the sustainable yields of the Basin. The annual loss of recharge to the underlying aquifers, at the project full build-out should be assessed and quantified. Mitigations are necessary to facilitate the percolation of surface water or reduce the annual loss of recharge. 2

Water Resources Engineering Associates prepared the *Preliminary Water Usage Evaluation & Hydraulic Analysis*, dated June 5, 2019 and included as Appendix 3.13 of the DEIR. The purpose of the Analysis is to demonstrate that the VCWWD-1 can serve potable water to the Project. The Analysis calculated approximately 118.88 acres of irrigated land to be included in the project. Domestic water demand was calculated in accordance with the Ventura County Waterworks Manual (VCWWM).

Appendix 3.17 of the DEIR is a water supply assessment titled *Revised Draft Water Supply Assessment Hitch Ranch Project* (Assessment) by Milner-Villa Consulting, dated February 2020. The 2015 version of the VCWWD-1 Urban Water Management Plan (2015 UWMP) was referenced in the Assessment. The *2020 Urban Water Management Plan for Ventura County Waterworks District 1* (2020 UWMP) from VCWWD-1 was not incorporated into the Assessment. However, the Assessment acknowledged that the 2015 UWMP was the most current at the time the Assessment was performed. The data and information from the 2020 UWMP update need to be incorporated into the Assessment and reflected in the DEIR. 3

Per the 2020 UWMP, VCWWD-1 will supply both potable and nonpotable (recycled) water. VCWWD-1 distributes potable water as a blend of imported State Water Project (SWP) water supplied by Calleguas Municipal Water District (CMWD) from the Metropolitan Water District (MWD) and groundwater from VCWWD-1 wells in the East Las Posas Basin. Imported water constitutes 80% of the total supply with groundwater and recycled water comprising the remaining 20%. Recycled (tertiary treated) water is

provided by the Moorpark Water Reclamation Facility (MWRF). The total potable water demand will be 261.2 acre-feet per year (AFY) and recycled water demand will be 103.4-AFY. Water demands for the Hitch Ranch Project were included in the total water demands projections in the 2015 UWMP, however it is not clear if these water demands were reflected in the 2020 UWMP. The 2020 UWMP states that the VCWWD-1 wells in the extracted 1,966 acre-feet (AF) in 2020 with a total FCGMA (FCGMA) extraction allocation of 2,195-AF in 2020. As of 2022, VCWWD-1 has an initial extraction allocation of 2,512.074-AF. VCWWD-1 purchases from CMWD totaled 7,112-AF in 2020. VCWWD-1 has a purchase agreement with CMWD with a Tier 1 water allocation amount of 10,722.5 (90% of 2021 Base Demand). A Will Serve Letter from VCWWD-1 is required to confirm that VCWWD-1 can provide and supply the proposed project needs at full build-out. 3

Approximately 5.5 million cubic yards of earth will be moved during multiple phases of onsite grading. The DEIR did not incorporate the water source or estimated/calculated volume of water required for grading and construction purposes. 4

GROUNDWATER QUALITY

Sanitary sewer service will be provided by VCWWD-1 by connecting to their existing sewer lines. Wastewater flows are conveyed to the MWRF. MWRF provides advanced primary, secondary and tertiary treatment. Recycled water is used primarily for agricultural and landscape irrigation. The Water Supply Assessment reported that recycled water supply is anticipated to increase by 2020, possibly necessitating expansion of the MWRF tertiary treatment capacity. The need for further expansion is forecasted by the year 2040. However, the 2020 UWMP reports that the MWRF has adequate tertiary treatment capacity, but this quantity is limited by RWQCB permitting restrictions. VCWWD-1 forecasts that the MWRF will be able to meet the 2025 and 2040 treatment capacity demands but will need a new permit from RWQCB. The project applicant will reportedly enter into an agreement with VCWWD-1 to fund recycled water infrastructure within the District. The funding will be used for increased recycled water infrastructure to offset irrigation of open space and landscaped areas. The DEIR does not discuss the increase in capacity at the MWRF due to added infrastructure or the current permitting restrictions on tertiary treated water production. It is not known how the proposed recycled water infrastructure will be beneficial with tertiary treated water production limitations. 2015 UWMP projections for recycled water usage in 2020 were substantially higher than actual reported usage in the 2020 UWMP. 5

It is not known how many individual septic systems or wastewater treatment systems currently or formerly provided service to the parcels within the Site boundary. Any existing wastewater treatment systems need to be removed during build-out. Phase I Environmental Site Assessments in Appendix 3.8 identified historical agricultural and animal keeping operations. Agricultural chemicals (i.e. pesticides, fertilizers, nitrates) are associated with the historical site activities. It is recommended that shallow soils be screened for potential impacts during site grading and soil movement.

Grading would include cut and fill operations and placement of engineered fill. Imported soil could be required for fill activities. To minimize potential leaching of contaminants from new soils to the underlying aquifers, imported fill should be screened and assessed prior to placement. The Department of Toxic Substance Control's (DTSC's) *October 2001 Clean Imported Fill Material Information Advisory* guidelines are commonly used for this purpose.

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The *2006 Phase I ESA Update & Limited Phase II* in Appendix 3.8 lists wells known to have been associated with the Project parcels. Ventura County began issuing well permits for the construction, maintenance, operation, use, repair, modification and destruction of groundwater wells in 1970 and has records of the following wells located within the parcels encompassing the proposed Project boundary:

State Well Number (SWN)	APN	Installation Date	Status	Main Use	Depth (ft bgs[1])	Screened Interval (ft bgs)
02N19W05A01S	511-0-020-110	Destroyed 1950	Destroyed	Agricultural	1,450	--
02N19W05A02S	511-0-020-110	--	Can't Locate Indeterminable	Agricultural	--	--
02N19W05B01S	511-0-020-110	Destroyed 1950	Destroyed	Agricultural	764	510-650
02N19W05B02S	511-0-020-110	Destroyed 1950	Destroyed	Agricultural	743	
02N19W05B03S	511-0-020-110	--	Can't Locate Indeterminable	Agricultural	--	--
02N19W05C01S	511-0-020-160	--	Can't Locate Indeterminable	Agricultural	--	--
02N19W05C02S	511-0-020-160	--	Can't Locate Indeterminable	Agricultural	--	--
02N19W05E02S	511-0-020-190	--	Destroyed	--	--	--
02N19W05E03S	511-0-020-190	--	Destroyed	Agricultural	360	120-360
02N19W05F01S	511-0-020-160	--	Can't Locate Indeterminable	Agricultural	--	--
02N19W05F02S	511-0-020-160	--	Abandoned	Agricultural	320	80-300
02N19W05F03S	511-0-020-160	--	Can't Locate Indeterminable	Agricultural	253	--
02N19W05G01S	511-0-020-110	--	Destroyed	Agricultural	--	--
02N19W05K01S	511-0-020-110	--	Non-compliant Abandoned	Agricultural	528	110-504
02N19W05K02S	511-0-020-110	--	Non-compliant Abandoned	Municipal	--	--
02N19W05K07S	511-0-020-110	--	Can't Locate Indeterminable	Agricultural	--	--

Wells not classified as "destroyed" and that will not be used by the Project or considered as "active" status will need to be permitted for destruction with the County per Ventura County Ordinance No. 4468 (Well Ordinance) and per the City of Moorpark Municipal Code Chapter 8.40.

7

[1] Feet below ground surface.

ITEMS TO BE ADDRESSED

The following items need to be reviewed, revised and/or updated:

1. Some of the key attached supporting documents (Appendices) and DEIR reference documents (i.e., 2015 UWMP) are outdated and do not incorporate the most current data related to water quantity and water supply, as required by the Ventura County 2040 General Plan, Water Resources Element. Provide the most current version (2020 UWMP) of the referenced document and incorporate the relevant data for the DEIR's analysis of water supply, water demand and water supply reliability. 8
2. Provide a Will Serve Letter from VCWWD-1 confirming that the District can provide the required water for the Project, at full build-out. 9
3. Provide an assessment of the annual loss of water recharging the underlying aquifers from the proposed new impervious surfaces. Discuss any mitigations that could reduce losses or facilitate percolation of surface water. 10
4. Excavation and placement of engineered fill are planned for large areas of the Site. Any imported fill will need to be screened using the DTSC *October 2001 Clean Imported Fill Material Information Advisory* guidelines to prevent leaching of potential contaminants. During grading activities, shallow soil should be screened for contaminants associated with the historical site activities. 11
5. There are "abandoned", "non compliant-abandoned" and "can't locate-indeterminable" status groundwater wells located within the project boundary. The DEIR does not discuss if a well search will be performed to confirm the well statuses. If the wells are encountered during grading they will need to be permitted with the County for destruction. Provide a well search report from a registered well inspector (geologist or engineer) and if located identify the wells to be destroyed. 12

Letter VCPW WRD Ventura County Public Works Water Resources Division

Response to Comment VCPW WRD-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment VCPW WRD-2

The current drainage report anticipates addressing storm water quality by implementing Bioinfiltration for over half the developed site and a combination of Bioretention with underdrain and Proprietary Biotreatment for the remaining portion of the development. Lot AC will utilize an infiltration basin (INF-1) water quality treatment measure which will have the capacity to increase the amount of infiltration such that it will reduce the Effective Impervious Area (EIA) to less than or equal to five percent (<5%) of the total project area. This will render the impervious areas "ineffective", and impacts would be less than significant.

Response to Comment VCPW WRD-3

The 2020 WSA was prepared utilizing the available (and adopted) information and most applicable reference documents known at the time. The District's 2015 UWMP was the most applicable (and adopted) document to use at the time of preparation of the WSA.

The revised Project includes a lower potable water demand of 244.1 AFY, lower recycled water demand of 94.5 AFY, and lower total water demand of 338.6 AFY.

A Will Serve Letter will be requested by the City / Project Applicant following the approval of the Specific Plan.

Response to Comment VCPW WRD-4

There is a total of 5.5 million cubic yards of grading anticipated. Assuming 30 gallons of water would be required per cubic yard this will require 506 acre-feet of water for grading the site. The site is anticipated to have the grading done in phases with Phase 1 including 3.9 million cubic yards of grading and Phase 3 including 1.5 million cubic yards of grading. Phase 1 will require 359 acre feet and Phase 3 will require 138 acre feet of water. Phase 2 will include construction of 250 single family units. These 250 units will require 124 acre of water when occupied. Phases 1-3 are anticipated to take place over a two-year period with Phase

1 occurring over a 12 month period, Phase 2 occurring over an 18 month period while overlapping Phases 1 and 3 and Phase 3 would occur over 12 months with the grading taking place in the last four months of that period. The DEIR anticipates 392.1 acre feet of annual potable and irrigation water use. The water use for phases 1-3 that will occur in a two year period is 630 acre feet or 315 acre feet per year on average which is less than the total 392.1 acre feet of water use anticipated during the construction period.

Response to Comment VCPW WRD-5

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

Please also refer to **Response to Comment LA_RWQCB-2-8,** and **Section 3.0, Revisions to the Draft EIR**, **Section 3.17, Utilities.**

Response to Comment VCPW WRD-6

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

Response to Comment VCPW WRD-7

As discussed on page 3.8-23 of Section 3.8, Hazards and Hazardous Materials, if any of the water wells with a status of '*Can't Locate Indeterminable*' are found during grading or development of the property, the applicant must destroy the well. Without proper abandonment, impacts to groundwater from potential on-site contamination would be considered significant. However, this impact will be reduced to a less than significant level by implementing **Mitigation Measure HM-1**.

The mitigation measure has been revised to include the permitting requirements. Please refer to **Section 3.0, Revisions to the Draft EIR, Section 3.8, Hazards and Hazardous Materials**.

Response to Comment VCPW WRD-8

Please refer to **Response to Comment VCPW WRD-3**

Response to Comment VCPW WRD-9

Please refer to **Response to Comment VCPW WRD-3**

Response to Comment VCPW WRD-10

Please refer to **Response to Comment VCPW WRD-2**

Response to Comment VCPW WRD-11

Please refer to **Response to Comment VCPW WRD-6**

Response to Comment VCPW WRD-12

Please refer to **Response to Comment VCPW WRD-7**

A-VCPW W&S-1

From: Bandagski, Amy <Amy.Bandagski@ventura.org>
Sent: Thursday, March 24, 2022 3:55 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Cc: Meckstroth, Scott <Scott.Meckstroth@ventura.org>; Kim, Jeewoong June <Jeewoong.Kim@ventura.org>
Subject: Notice of Availability for Draft Environments Impact Report for Hitch Ranch Moorpark

Hello Doug,

Ventura County Water & Sanitation has reviewed the Hitch Ranch Draft Environmental Impact Report. Please see our prepared comments on the DEIR attached. 1

Regards,

Amy Bandagski
Engineering Tech II
Water and Sanitation

6767 Spring Road / #6000
Moorpark, CA 93020
P: 805.378.3023
VCPWA Online | Facebook | Twitter

Letter VCPW W&S-1 Ventura County Public Works Water and Sanitation

Response to Comment VCPW W&S-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

A-VCPW W&S-2

PUBLIC VENTURA COUNTY WORKS

COUNTY of VENTURA

Jeff Pratt
Agency Director

David Fleisch
Assistant Director

Central Services **Joan Araujo**, Director | Engineering Services **Christopher Cooper**, Director | Roads & Transportation **Christopher Kurgan**, Director | Water & Sanitation **Joseph Pope**, Director | Watershed Protection **Glenn Shephard**, Director

March 24, 2022

City of Moorpark
799 Moorpark Ave.
Moorpark, CA 93021

Attn: Douglas Spondello

Subject: Draft Environmental Impact Review (DEIR)
Hitch Ranch Specific Plan SCH#2019070253

The Ventura County Waterworks District No. 1 (District) has reviewed the submittal for the Draft EIR with respect to issues under the District's purview and determined the following:

- 3.17.2.1 Existing Condition – The District has historically never been nearly 100 percent reliant on imported water to meet local water supply demands. 1
- 3.17 Utilities and Service Systems – DEIR does not take into consideration the District's requirements to either construct or help pay for the extension of the recycled water distribution system to serve the subject development, and to construct a new reservoir for the development as set forth by the Water Availability Letter issued July 13, 2021. Project impacts (3.17.2.3) to be updated accordingly. 2
- 3.17.2.1 District Wells – District allocation has increased to 2,195 AFY in 2020. DEIR references outdated information from 2015 Urban Water Management Plan (UWMP) and should reference data and values from the updated 2020 UWMP. Table 3.17-1 assumes additional groundwater pumping up to 5,000 AFY from future groundwater desalter facilities and a representative reduction in imported surface water. The District's desalter facilities proposed in 2018 in the 2015 UWMP have been replanned to be constructed in 2030 per the 2020 UWMP. 3
- 3.17.2.1 Recycled Water – Recycled water produced by the Moorpark Wastewater Reclamation Facility (MWRF) only serves Incorporated & unincorporated Moorpark. The DEIR makes multiple references to Moorpark Wastewater Treatment Facility which should be corrected to the MWRF. The MWRF's capacity and tertiary capacity are not previously mentioned in the DEIR as stated. Recycled water forecasts to be updated to 2020 UWMP values. 4

- 3.17.2.3 Project Impacts – Until such a time that recycled water could be guaranteed, it would be prudent to additionally assume recycled water demand be supplied instead with potable water. References to Table 3.17-2 are incorrectly listed as Table 3.14-2. 5
- 3.17.2.3 & 3.17.3.3 Project Impacts – Estimated water demands in table 3.17.2 for multi-family population per dwelling unit are inconsistent with table 3.17-6 sewer generation loads for multi-family. More sewer is generated than supplied. 6
- DEIR makes multiple references to a non-existent 2016 UWMP. 7
- 3.17.2.5 & 3.17.3.5 Mitigation Program – Include standard condition to have recorded easements dedicated to the District for water and sewer facility improvements. Contract to installs have been replaced with Agreement to Installs. 8

If you have any questions concerning this item, please contact the undersigned at (805) 378-3023.

Sincerely,

Ryan Lippincott

Amy Bandagski
Engineering Technician II, PWA Water & Sanitation

Letter VCPW W&S-2 Ventura County Public Works Water and Sanitation

Response to Comment VCPW W&S-2-1

The Ventura County, Department of Public Works, Waterworks District No. 1 (District) provides its customers with a mix of local groundwater, imported water from Calleguas Municipal Water District, and local recycled water (for nonpotable demands). In 2020, water supplies included 7,117 acre-feet (AF) imported water (71.0 percent), 1,966 AF groundwater (19.6 percent), and 941 AF recycled water (9.4 percent). See the District's 2020 UWMP, Chapter 6, for additional details.

Response to Comment VCPW W&S-2-2

In order to ensure a supply of recycled water to the Hitch Ranch Specific Plan project site, a condition of approval for the Hitch Ranch Specific Plan project will require the project applicant to enter into an agreement with the District to fund recycled water infrastructure.

Response to Comment VCPW W&S-2-3

The District's groundwater allocation was approved in September 2020 by the Courts in a settlement. The settlement gives the District 10.6 percent of the East Las Posas Basin Safe Yield. Effective starting in 2021, the District's groundwater allocation will be 2,195 acre-feet per year (AFY) which is 439 AFY higher than the projected groundwater supply of 1,756 AFY identified in the 2015 UWMP. The Safe Yield of the basin and the District's allocation will be examined every five years and adjusted accordingly by FCGMA to meet the goals in the GSP by 2040. See the District's 2020 UWMP, Chapter 6, for additional details.

Response to Comment VCPW W&S-2-4

The Moorpark Wastewater Reclamation Facility (MWRF) provides recycled water to customers within the District. The MWRF has a capacity of 5.0 million gallons per day (MGD) (5,601 AFY) for primary and secondary treatment and can treat approximately 3.0 MGD (3,360 AFY) to tertiary levels, but currently is only permitted to treat 1.5 MGD (1,680 AFY) to tertiary levels that meet Title 22 requirements. In FY 2020, the MWRF produced 966 AF of tertiary treated recycled water and sold approximately 941 AF to District customers (25 AF was used at the MWRF for in-plant purposes and landscape irrigation). See the District's 2020 UWMP, Chapter 6, for additional details.

Response to Comment VCPW W&S-2-5

The Project may include dual water connections (potable and recycled) for all locations that plan to use recycled water. Maximum recycled water demand will not be required to be provided to the entire Project

from the start of construction. Although, recycled water could be used for many elements of construction. The Project is anticipated to be built in phases with several areas that plan to use recycled water to be built up to five years after the start of construction. The maximum recycled water anticipated at Project build-out is approximately 95 AFY. The District's 2020 UWMP indicates that the MWRF has the capacity to treat 3,360 AFY of recycled water to tertiary levels but is only permitted to treat 1,680 AFY. In 2020, the District produced 966 AFY of recycled water. Therefore, it appears that the District is permitted to and has the capacity to distribute recycled water to the Project.

The third paragraph on page 3.17-12 will be revised in the Final EIR to correct the Table citation. Please refer to Section 3.0, Revisions to the Draft EIR, Section 3.17, Utilities.

Response to Comment VCPW W&S-2-6

It is anticipated that residential units within the Hitch Ranch Project will maximize the use of water conservation measures both inside and outside the dwellings. Residential homes will be built to the current California Plumbing Code including indoor water conservation fixtures which will reduce indoor demands compared to most current housing. Residential lots with landscaped areas will meet the California Model Water Efficient Landscape Ordinance. The majority of the residential lots will include less than 400 square feet of landscaped area. The use of these measures throughout the Project will reduce the water demand as compared to residential units that do not implement water conservation measures. The Hitch Ranch Project will include the use of recycled water for all non-residential landscape irrigation demands, including parks, medians, slopes, and other irrigated areas.

The District agreed that customers in newer housing units within the District use less water per person than older housing units, while future housing (i.e., Hitch Ranch Project) is anticipated to use even less. The District approved for the Hitch Ranch Project to use a residential potable water demand rate of 135 gallons per capita per day (gpcd) for single-family homes and 60 gpcd for multiple-family homes. These potable water demands for single-family and multiple-family residential lots were approved by the District's Director Susan Pan and staff via in-person meetings in February and May of 2018.

Generally, a sewer system experiences between 65 and 85 percent return rates of water use to the sewer, depending on the type of land use and extent of outdoor water use. The estimated wastewater generation rates for multiple-family residential and single-family residential as needed have been adjusted as shown in revised Table 3.17-6 using a return rate of 65 percent for the single family units and an 85 percent return

rate for the multi-family units,[5] to reflect the approved potable water demand rates agreed to and noted above.

Table 3.17-6
Proposed In-Tract Average Sewer Generation ~~Loads~~

	VCWW Sewer Criteria		Proposed Average Sewer Load		
Dwelling Type	Dwelling Density	Per Capita Sewer Load (gallons/day)	Dwelling Units	Sewer Load (Gallons/day)	~~Sewer Load (cfs)~~ AFY
Single family	3.5	88~~78~~	427	131,516~~116,571~~	147.3~~0.180~~
Multiple family	2.2	51~~78~~	328	36,802~~56,285~~	41.2~~0.087~~
	Total		755	168,318~~172,856~~	188.5~~0.267~~

Source: Encompass Consultant Group, December 2019, and April 2022

Response to Comment VCPW W&S-2-7

The District's current 2020 UWMP was adopted in 2021. The District's prior 2015 UWMP was adopted in 2016.

References to the 2015 UWMP are corrected in the Final EIR. Please refer to Section 3.0, Revisions to the Draft EIR, Section 3.17, Utilities.

Response to Comment VCPW W&S-2-8

The Standard Conditions and Requirements on pages 3.17-16 and 3.17-20 are revised in the Final EIR to reflect the District's requests. Please refer to Section 3.0, Revisions to the Draft EIR, Section 3.17, Utilities.

5 The 65 percent return rate applied to the single-family units is due to the larger yards, such that more of the water usage will be expended for irrigation than for the multi-family units.

COUNTY of VENTURA

A-VCRMA EHD

RESOURCE MANAGEMENT AGENCY
CHARLES R. GENKEL
Environmental Health Director

March 9, 2022

City of Moorpark, Community Development Department
ATTN: Doug Spondello, Planning Manager
799 Moorpark Avenue
Moorpark, CA 93021

Hitch Ranch Specific Plan (HRSP), Environmental Document Review – Notice of Draft Environmental Impact Report (RMA REF # 22-003)

Ventura County Environmental Health Division (Division) staff reviewed the information submitted for the subject project.

The Division provides the following comments:

1. The proposed residential developments include construction of community recreation areas with swimming pools. The builder/applicant shall submit plans for the public swimming pools to this Division and obtain plan approval prior to beginning any construction of the community swimming pools and auxiliary structures. A permit to operate each swimming pool is also required prior to use inauguration. 1

   Contact the Ventura County Environmental Health Division, Community Services Section for information on swimming pool plan review and permitting requirements: https://vcrma.org/recreational-health-public-pools-and-spas.

2. New storm drains and stormwater systems may be designed and proposed in various phases of the HRSP. The construction and use of the stormwater drainage outlets have the potential for proliferation of vectors of disease, including mosquitoes. Stormwater structures should be designed and maintained to prevent the harborage and breeding of vectors such as mosquitoes, as well as to minimize the potential health impacts created by these vectors. 2

   Guidance from the California Department of Public Health for minimizing vector production in stormwater structures is attached.

HALL OF ADMINISTRATION #1730
805-654-2813 • FAX 805-654-2480 • 800 South Victoria Avenue, Ventura, CA 93009 • vcrma.org

If you have any questions, please contact me at (805) 654-2830 or Ashley.Kennedy@ventura.org.

Ashley Kennedy, R.E.H.S.
Land Use Section
Environmental Health Division

Attachments:

1. California Department of Public Health: Checklist for Minimizing Vector Production in Stormwater Management Structures

A-VCRMA EHD

Checklist for Minimizing Vector Production in Stormwater Management Structures

Management of mosquitoes and other vectors in stormwater management structures, such as flood control basins and Best Management Practices, is critical for protecting public health. With careful planning, such structures can be designed, built, operated, and maintained in a manner that minimizes opportunities for the proliferation of vectors. This publication provides checklists of action items intended to lessen the short and long-term potential for vector production in stormwater management structures while reducing dependence on pesticides to the maximum extent possible. With the wide variety of structures and build locations, it is anticipated that not all action items will apply to every project. Answers to frequently asked questions follow the checklist.

For simplicity, stormwater management structures have been divided into three categories, each with specific considerations. Certain structures may require reference to more than one checklist.

Dry Systems. Any structure designed to drain completely following capture and/or treatment of runoff. Examples include flood control basins, extended detention basins, infiltration basins and trenches, Austin sand filters, swales and strips, drain inlet inserts, linear-radial gross solids removal devices. Permanent-water features sometimes included as part of dry system design, such as micropools, should be considered separately using the checklist for "wetlands".

Wet Systems. Any structure designed with features such as sumps, vaults, and/or basins that hold water permanently, or longer than 4 days. Examples include open catch basins, concrete retention basins, Delaware sand filters, and a variety of belowground proprietary devices.

Wetlands. Any structure constructed as a naturalistic system with permanent surface waters, regardless of the formal given name (e.g., stormwater pond, retention basin, wet basin, constructed wetlands, treatment wetlands, etc.). This section also applies to permanent-water features sometimes included as part of dry system design such as micropools.

Additional information is available from the California Department of Public Health
http://www.cdph.ca.gov/HealthInfo/discond/Pages/MosquitoBorneDiseases.aspx
and from the University of California, Division of Agriculture and Natural Resources (UCANR)
http://www.ipm.ucdavis.edu/PDF/MOSQ/mosquitostormwater.pdf

To facilitate public health mosquito control, it is strongly recommended that project locations be provided to the local vector control agency. To locate your local mosquito and vector control agency, go to http://westnile.ca.gov and search by zip code.

DRY SYSTEMS

Recommended strategy: Complete discharge of all captured water in 4 days or less.

- ☐ Is the structure designed to discharge all captured water in 4 days or less?
- ☐ Has every effort been made to trace and eliminate persistent non-stormwater flows (e.g. irrigation runoff) that may enter the system and jeopardize non-chemical vector control efforts?
- ☐ Has groundwater depth been carefully evaluated to ensure that the structure will not be permanently or seasonally flooded (i.e. is the base of the basin higher than the local groundwater table)?
- ☐ Does the design provide an adequate slope between the inlets and outlets, with special attention given to ensure corners are above grade?
- ☐ Has soil been compacted adequately during grading to minimize subsidence, which can result in pools of standing water?
- ☐ Does the design slope take into consideration the inevitable accumulation of sediment and debris between maintenance periods that can result in standing water, especially in and around the inlet?
- ☐ Does the design minimize the use of features that increase the potential for standing water, such as loose riprap and concrete curbs?
- ☐ Does the structure include a concrete or earthen low-flow channel to concentrate (i.e. minimize available surface area) and direct non-stormwater flows to the outlet?
- ☐ Is the distribution piping sloped adequately and smooth (not corrugated) on the inside to prevent standing water?
- ☐ Are the inlet structures and energy dissipaters designed and sloped sufficiently to prevent scour depressions?
- ☐ Are the outlets designed with debris screens or other features that reduce the potential for clogging?
- ☐ Is the structure designed with safe and sufficient access for inspection, maintenance, and/or vector control activities when needed?
- ☐ Does the operation and maintenance plan include a minimum of quarterly inspections to ensure that vegetation overgrowth, sediment accumulation, or other factors have not created areas of standing water?
- ☐ Does the operation and maintenance plan include a minimum annual maintenance to remove vegetation overgrowth, remove sediment and debris accumulation, and otherwise return the structure to "as-designed" conditions?
- ☐ Is signage provided and clearly visible with minimum information indicating the type of structure (e.g. extended detention basin), ownership, and contact information?

WET SYSTEMS

Recommended strategy: Deny mosquito access to standing water by using covers, screens, and/or other barriers.

- ☐ Have sumps, vaults, or basins that hold water permanently, or longer than 4 days, been completely or partially sealed against adult mosquito entry?
- ☐ If used, are covers tight fitting, with gaps or holes of no greater than 1/16" (2 mm)?
- ☐ If used, are aluminum or nylon screens for sealing small openings secured with gaps or holes of no greater than 1/16" (2 mm)?
- ☐ If cast iron manhole covers are used, are pick holes sealed or is a mosquito-proof insert provided below?
- ☐ Where feasible, are the inlet and/or outlet conveyance pipes submerged to prevent adult mosquito entry into the main water storage area?
- ☐ Where feasible, are conveyance pipes fitted with flapper valves, collapsible fabric tubes, or other barriers to prevent adult mosquito entry into the main water storage area?
- ☐ Is the structure designed with safe and sufficient access to permanent water areas for inspection, maintenance, and/or vector control activities when needed?
- ☐ Does the operation and maintenance plan include a minimum of quarterly inspections to ensure that barriers to mosquito entry are intact and in place as designed?
- ☐ Where possible, is signage provided with minimum information indicating type of structure (e.g. CDS™), ownership, and contact information?

WETLANDS

Recommended strategy: Create and maintain habitat least-suitable for mosquito breeding.

- ☐ Is the system designed with features that minimize the areas suitable for mosquito production?
- ☐ Does the design discourage emergent vegetation in shallow water zones where vegetation is not needed or desired, for example by using concrete liners in sediment forebays?
- ☐ Are slopes designed as steep and uniform as possible to discourage invasive, emergent vegetation?
- ☐ Does the system include deep water zones, in excess of 4 ft, to reduce available area for emergent vegetation and provide refuge for natural mosquito predators such as mosquitofish and certain invertebrates?
- ☐ Where permitted, have mosquitofish been introduced to help control mosquitoes?
- ☐ Does the system include provisions for rapid dewatering if needed for emergency control of mosquitoes?
- ☐ Is the structure designed with safe and sufficient access for inspection, maintenance, and/or vector control activities when needed?
- ☐ Are access roads built close to the shoreline and around the perimeter of the wetland to the extent feasible?
- ☐ Are access points incorporated at regular intervals along the perimeter to allow for vector monitoring and control when necessary.
- ☐ Does the operation and maintenance plan include a minimum of quarterly inspections to ensure that vegetation overgrowth, sediment accumulation, or other factors have not created areas suitable for mosquito production?
- ☐ Does the operation and maintenance plan include a minimum annual maintenance to remove vegetation overgrowth, remove sediment and debris accumulation, and otherwise return the structure to "as-designed" conditions?
- ☐ Is signage provided and clearly visible with minimum information indicating type of structure (e.g. stormwater treatment pond), ownership, and contact information?

Frequently Asked Questions

DRY SYSTEMS

1. Why is it important to drain all captured water in 4 days or less?
Most mosquito species important to public health require at least 6 days to develop from egg to adult. Designing dry systems to drain completely in 4 days ensures that no mosquitoes will be produced with a built-in margin of safety of several days.

2. Our stormwater treatment BMPs were designed to dewater in 4 days, but persistent non-stormwater flows result in areas of standing water that routinely produce mosquitoes. How do we address this problem?
Dry-weather urban runoff is a major contributor to mosquito production in urban areas everywhere. If the source(s) cannot be traced and eliminated, the best alternate solution is to minimize the surface area available to mosquitoes by cutting a low-flow channel through the BMP to direct the water to the outlet as efficiently as possible.

3. Will very shallow areas of standing water that remain in our detention basins after a storm event provide a potential source of mosquito production?
Certain species of mosquitoes important to public health are very adaptable. Water as shallow as 1/16", and sometimes less, can be sufficient to allow mosquito larvae to develop.

WET SYSTEMS

1. Our stormwater treatment BMPs are installed belowground and covered. Why should we be concerned about mosquitoes?
Unfortunately, certain species of mosquitoes capable of transmitting disease are well-adapted for finding and breeding in belowground habitats. These mosquitoes can access belowground sources through openings as small as 1/16" (2mm) and they can fly great distances through pipes.

2. We wish to install a belowground proprietary BMP in a new housing development. If we seal the access covers against mosquitoes, how far away should we design the inlet grates to keep mosquitoes from accessing the permanent-water sump?
The absolute flight limits of mosquitoes that can breed belowground are unknown; however, recent studies found that females could fly at least 80 feet through 4" diameter pipe to reach a source of standing water and were unaffected by changes in pipe course. It is unlikely that mosquitoes can be excluded from underground sources using conveyance pipe length alone.

3. We are considering the addition of weep holes to our belowground sumps to allow them to dewater between storms so they do not produce mosquitoes. Will this work?
Weep holes are typically not a reliable choice for preventing mosquito production due to their high probability of failure due to clogging.

4. I was told that mosquitoes can not breed in water with a visible oil sheen on the water surface. Is this true or false?
With some exceptions, this is false. In most cases, the oil sheen visible on the water surface is not uniform, but is broken. Certain species of mosquitoes capable of transmitting disease can exploit these habitats by using the oil-free areas for egg laying and larval development. In addition, surface oils are broken down over time, disappearing altogether if not regularly replenished by oily runoff.

5. We are considering a provision to dewater our belowground sumps after every storm event to prevent mosquito production. Will this be effective?
It has the potential to be effective, but there are several complicating factors to consider: 1) dry-weather urban runoff frequently replenishes belowground sumps making pumping efforts futile, and 2) pumps often leave a small amount of residual water in the bottom of the sumps, and water as shallow as 1/16" or less can be sufficient to allow mosquito larvae to develop.

6. Our stormwater sumps contain very deep water. Will this prevent mosquito production?
Unlike deep water zones in ponds and wetlands where mosquitoes generally do not develop due to predators, wind, and wave action, mosquitoes are unaffected by water depth and/or surface area in belowground systems.

7. *Will flowing water prevent mosquito production?*
Flowing water will discourage females from laying eggs and can kill larvae. For example, a vortex separator receiving year-round flow from an urban stream should not produce mosquitoes due to constant movement of the entire water surface area. However, water flow through systems with square sumps (or sumps of other geometrical shapes) may not completely eliminate mosquito production due to the stagnant zones created in the corners where water movement is minimal.

8. *Will surface agitators prevent mosquito production?*
Agitators, sprinklers, or other means of disturbing the water surface will discourage females from laying eggs and can kill larvae, however, in order to be effective the *entire* surface must be disturbed.

9. *It seems that controlling mosquitoes in belowground stormwater systems without resorting to chemical treatment is rarely successful. How do we deal with this problem?* Field research has documented the difficulty in controlling mosquitoes in belowground stormwater systems without chemicals (i.e. exclusion of mosquitoes was successful in a few systems studied, but the vast majority of attempts resulted in only marginal reductions). However, for reasons that are not entirely understood, not all belowground systems produce mosquitoes equally; some are sporadic and some are year-round producers. It is strongly recommended that the local vector control agency be consulted to determine site-specific monitoring and control needs.

WETLANDS

1. Why are mosquitoes still being detected in well designed and maintained wetlands?
Mosquitoes are difficult to eliminate completely from wetlands due to the complexity of the created environment. The goal should be to minimize mosquito production by making the habitat less desirable for them.

2. Will the deep areas of stormwater ponds where no emergent vegetation can grow produce mosquitoes?
Deep, open areas of water are typically unsuitable for mosquito production due to surface disturbance caused by wind and exposure to predators. However, if the deep zones become colonized by floating vegetation such as water hyacinth or by clumps of floating filamentous algae, mosquitoes may breed in the shelters created among these plants.

3. Why is it important to keep emergent vegetation such as cattails and bulrush from getting overly dense?
Dense emergent vegetation, especially along perimeter margins, will prevent predators such as mosquitofish from accessing these areas, creating ideal habitats for mosquitoes.

4. Why is it important to eliminate floating vegetation such as water hyacinth and maintain water quality to discourage clumps of floating filamentous algae?
Not only are certain floating plants such as water hyacinth considered exotic invasive species harmful to North American ecosystems, but these plants provide excellent habitats for mosquitoes sheltered from predators.

5. How do I determine if mosquitofish are permissible for use in my area?
As a general rule, if the stormwater wetland is self contained, and does not empty into a natural waterway, mosquitofish can be used to control mosquitoes. If in doubt, it is best to consult with the local office of the Department of Fish and Game before stocking fish.

6. How often should mosquitofish be restocked to reduce mosquito numbers?
In general, mosquitofish are very hardy and will rapidly increase in numbers to form a stable population. Large game fish such as bluegill and bass may negatively impact or eradicate mosquitofish populations, as can large numbers of fishing birds; however, low temperatures are the leading cause of population failures. In cold climates, mosquitofish may need to be restocked each spring following the last frost.

7. Do we need to be concerned with mosquito production during "cold snaps" or winter periods?
Most mosquitoes important to public health can develop successfully in water ranging from approximately 45 to 100 °F, with the ability to survive short periods outside this spectrum. Short cold snaps may not be lethal to larvae if the habitat provides a buffer area, however, extended periods of cold below 45 °F will halt mosquito production.

8. Will encouraging nesting and roosting habitat for certain birds and bats around our stormwater wetland reduce the population of adult mosquitoes appreciatively?
Although certain birds (e.g. swallows, martins) and bats have been reported to consume large numbers of adult mosquitoes, these animals do not preferentially feed on mosquitoes and there is no evidence to show that they substantially reduce mosquito populations.

Vector-Borne Disease Section
California Department of Public Health
(916) 552-9730
September 2010

Letter VCRMA EHD Ventura County Resources Management Agency Environmental Health Division

Response to Comment VCRMA EHD -1

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

Response to Comment VCRMA EHD -2

Comment noted. The City and project applicant will comply with all state, regional and local agency regulatory and permitting requirements.

A-VCTC-1

From: Amanda Fagan <afagan@goventura.org>
Sent: Monday, March 28, 2022 2:17 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Cc: Caitlin Brooks <cbrooks@goventura.org>; Andrew Kent <akent@goventura.org>
Subject: Hitch Ranch DEIR - Comments from VCTC

Mr. Spondello (Doug),

Please see attached comment letter on the Hitch Ranch Draft Environmental Impact Report. 1

Thank you for the opportunity to review.

Kindest regards,

Amanda Fagan
Director of Planning and Sustainability
Ventura County Transportation Commission
751 E. Daily Drive, Suite 420
Camarillo, CA 93010
(805) 642-1591 ext. 103
afagan@goventura.org

Ventura County Transportation Commission

Letter VCTC-1 Ventura County Transportation Commission

Response to Comment VCTC-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Ventura County Transportation Commission

March 28, 2022

Mr. Douglas Spondello
Planning Manager
City of Moorpark
799 Moorpark Avenue
Moorpark, CA 93021

Transmitted via Email to: dspondello@moorparkca.gov

Subject: Draft Environmental Impact Report (EIR) – Hitch Ranch Specific Plan

Dear Mr. Spondello,

Thank you for the opportunity to review and comment on the Hitch Ranch Specific Plan Draft Environmental Impact Report on behalf of the Ventura County Transportation Commission (VCTC). Please accept the following comments: 1

Baseline Vehicle Miles Traveled (3.15-8) & City of Moorpark Threshold Criteria (3.15-18)

The Hitch Ranch Specific Plan DEIR states that "The Ventura County Transportation Commission (VCTC) has drafted, although not yet adopted guidance in accordance with the Governor's Office of Planning and Research (OPR) that suggests the minimum reduction standard threshold for residential, office and industrial projects be 15% below the existing per capita VMT." The draft guidance cited in the DEIR was produced by the County of Ventura Public Works Agency, not VCTC, and is intended to provide guidance for the unincorporated area. VCTC is a regional transportation planning agency separate from the County of Ventura and cannot establish or adopt VMT thresholds for the County or local jurisdictions. VCTC's role is to assist local agencies to implement the changes to CEQA under Senate Bill (SB) 743 by providing data and tools, such as the Ventura County Traffic Model (VCTM) and Vehicle Miles Traveled (VMT) mapping available on the VCTC website. VCTC is also currently coordinating a VMT Adaptive Mitigation Program for the benefit of local agencies. All references in the DEIR to VCTC establishing VMT thresholds, guidance or protocols should be amended. 2

Impact TRA-2 Conflict or be inconsistent with CEQA Guidelines section 15064.3(b). (3.15-28)

The DEIR estimates the average daily VMT per capita for Ventura County is 18.6, and based on the OPR guidance, uses a threshold of 15.8, or 15% less than the County average. The DEIR estimates the Project will generate 46,342 daily VMT using the data from SCAG and EMFAC air quality model. The EIR states that 102 daily vehicle trips from single family homes and 266 daily vehicle trips from multi-family homes would be shifted to Metrolink due to the project's proximity to the Metrolink station. This assumes a 3

Metrolink model share of 2.5% for single family and 5% for multi-family homes. As stated in the DEIR, the project does not fall within a High-Quality Transit Area and is not subject to screening from VMT analysis.

The DEIR estimates that the Hitch Ranch Project's proximity to the Metrolink station would reduce project average daily VMT by 12,757 or 27.1%. This reduction would result in a project VMT per capita rate of 13.6, below the estimated threshold for VMT mitigation. We believe that this large of a VMT reduction is unlikely and the methodology may overestimate the shift in mode share to rail transit. The major Metrolink destinations on the Ventura County Line are in the San Fernando Valley and Downtown Los Angeles. From the Ventura County Traffic Model, about 12% of total daily trips originating in the City of Moorpark are destined for Los Angeles County (about half as much could be reasonably served by the Metrolink corridor) or 24% of commuter trips according to the Census Transportation Planning Products. When the Origin-Destination data is factored into the analysis, the number of trips and overall VMT reduced from a mode shift to Metrolink is significantly lower than the DEIR concludes.

Furthermore, the City of Moorpark is generally a high VMT generating jurisdiction and surrounding Traffic Analysis Zones (TAZs) with similar residential developments tend to have a higher-than-average VMT per Capita according to the data from the VCTM. Therefore, it is possible that the project should require VMT mitigation.

Ventura County Traffic Model 2016 Base Year

Jurisdiction/TAZ	Home-based VMT/Capita	Work-based VMT/Employee	Total VMT/Service Population
Overall Ventura County	16.48	19.09	27.25
Moorpark	21.33	23.13	35.26
60124101 Existing Hitch Ranch TAZ	25.21	34.89	37.34
60129700 Mammoth Highlands TAZ	23.18	22.14	26.67

3

The DEIR utilizes data from the EMFAC sketch air quality model to estimate project VMT generation. For large projects, VCTC recommends performing a traffic model scenario run. Unlike sketch models, VCTM captures the interactions between the project, road and transit network and regional land use, producing more accurate VMT estimates. The Ventura County Traffic Model is available upon request for all Ventura County agencies to use for VMT analysis. The 2016 Base Year VMT data and maps from VCTM are also available on the VCTC website: https://www.goventura.org/work-with-vctc/traffic-model/.

Goal 5 (3.15-24 & 3.15-26)

Finally, VCTC encourages the DEIR consider Section 3 of the Ventura County Bicycle Wayfinding Plan prior to implementing Goal 5 (3.15-24 and 3.15-26), when designing bicycle wayfinding signage and infrastructure. The Wayfinding Plan can be accessed at https://www.goventura.org/wp-content/uploads/2018/03/VCTC_Bicycle_Wayfinding__Plan_April_2017_FINAL.pdf.

4

A-VCTC-2

Should you have any questions concerning this review, please contact me at (805) 642-1591 (ext. 103) or by email at: afagan@goventura.org.

Respectfully Submitted,

Amanda L. Fagan

Amanda Fagan
Director of Planning and Sustainability

Letter VCTC-2 Ventura County Transportation Commission

Response to Comment VCTC-2-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment VCTC-2-2

The commenter clarifies the role of VCTC in developing VMT thresholds and guidance. The Final EIR is revised to reflect this change (See **Section 3.0, Revisions to the EIR**).

Response to Comment VCTC-2-3

The commentor provides an alternative approach to the VMT calculation provided within the DEIR, including suggestions regarding mode shift (discussed further below). As stated by the commenter, VCTC's role is to assist local agencies to implement the changes to CEQA under Senate Bill (SB) 743 by providing data and tools, such as the Ventura County Traffic Model (VCTM) and Vehicle Miles Traveled (VMT) mapping available on the VCTC website. It should be noted that VCTC was consulted prior to release of the DEIR, however at the time, VCTC had not yet developed any guidance regarding VMT.[6] In the absence of such guidance, the City appropriately used Office of Planning and Research's (OPR) threshold and suggested methodology. This approach is supported by CEQA Guidelines Section 15125, which indicates an EIR should use the best available data at the time an NOP is published. In this case, the NOP for the project was published on July 10, 2019. Prior to conducting the VMT analysis, both the City and VCTC were consulted regarding available guidelines and VMT data. Absent local guidelines and VMT data from the VCTC model, the methodology and data utilized in the DEIR VMT analysis was the most current and available at that time. Therefore, the data utilized for the VMT analysis is appropriate and reasonable for use in the DEIR.

Regarding the estimates in the DEIR for mode shift, the project's DEIR analysis of vehicle miles traveled (VMT) estimated a mode shift due to the project's close proximity to the Metrolink station that is equivalent to approximately 12,757 average daily VMT (equates to 27.1% of the total baseline daily project VMT). Subsequent to the preparation of the DEIR, VCTC and the County of Ventura Public Works Transportation

6 Email correspondence from Caitlin Brooks, Program Manager, Transportation Planning, Ventura County Transportation Commission, dated January 17, 2020.

Department have provided in their respective comment letters the current data from the regional travel demand model, which was not available at the time of the DEIR's NOP published on July 10, 2019.[7] The comment letters also state that the 27.1% mode shift reduction in project VMT is overestimated given the project's location. VCTC and the County of Ventura also suggests the use of the VCTC model for the VMT analysis (which, as noted above, was not available at the time of the DEIR's NOP).

Although VCTC has indicated mode shift from car to rail transit that is due to the project's proximity to the Moorpark Metrolink station may be less than stated in the EIR, the EIR's finding of a less than significant transportation impact is not dependent on the specific mode shift assumption used in the DEIR.

The DEIR VMT analysis assumed a transit mode shift of 2.5% and 5% of daily trips for single family and multifamily residences, respectively. However, when a more modest 1% mode shift is applied to the project's daily trips[8] with an average trip length for Metrolink users at 34.3 miles[9], a reduction of 2,206 VMT is estimated[10]. This results in a 4.8% reduction in project VMT[11]. The 1% mode share is reasonable given the project's proximity to the Metrolink station, which results in an average walking distance from the project to the Metrolink station that is approximately 1.25 miles (approximately a 25-minute walk[12]), and 100 percent of the project is within a reasonable 7 to 8-minute e-bike ride to the station[13].

In addition to the project's proximity to the Metrolink station, the project will construct and/or implement the following VMT reducing measures:

- 135 affordable housing units
- pedestrian facilities
- bicycle facilities
- multi-use trails
- roadways that will increase the bus transit network
- traffic calming features such as roundabouts

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7 Email correspondence from Caitlin Brooks, Program Manager, Transportation Planning, Ventura County Transportation Commission, dated January 17, 2020.

8 6,432 ADT x 1% = 64 ADT reduction

9 Source: Metrolink 2018 Origin-Destination Study Trip Length for Ventura County

10 64 ADT x 34.3 miles = 2,206 VMT mode shift reduction

11 2,206 VMT / 46,342 Total Project VMT = 4.8% VMT reduction

12 Assumes 20 minute walk per mile

13 Assumes e-bike speed of 15 mph and distance of 1.8 miles (15 mph/60 min = .25 miles/min and 1.8 miles / .25 miles/min = 7.2 min.)

- public charging stations at parks, HOA recreations areas, multi-family neighborhoods
- secured bicycle parking at multi-family neighborhoods, trailheads, recreation areas, and parks
- pre-wired residential units with high-speed internet and co-working spaces to encourage telecommuting
- land donation to the city to be used for the construction of additional affordable housing units
- community based travel planning services for residents

As provided by the California Air Pollution Control Officers Association GHG Handbook,[14] VMT reductions can be achieved by construction or implementation of the project features listed above. While not all listed above will result in a quantifiable VMT reduction, those with quantifiable reductions are calculated as follows. The construction of affordable housing units can achieve a 5.1% reduction in VMT[15]. The construction of pedestrian sidewalks can achieve a 6.4% VMT reduction.[16] The construction of bicycle facilities can achieve a 0.1% VMT reduction[17]. The expansion in the transit network due to bus stops on the newly constructed roadways within the project can result in a 0.3% VMT reduction.[18] Lastly, implementation of a community-based travel planning program can result in a 2.3% reduction in VMT.[19] Combined with the transit mode shift discussed above, a 17.7% reduction in VMT[20] is achievable and the Project's VMT rate is reduced to 15.3[21] VMT/capita, which is below the countywide threshold of significance of 15.8 VMT per capita utilized in the DEIR VMT Analysis.

The Governor's Office of Planning and Research (OPR) guidelines provide that either a citywide average VMT/capita or the regional average VMT/capita can be used to establish the threshold of significance.[22] The City of Moorpark has a higher average VMT/capita than the countywide average, so as such, using the countywide average is a more conservative approach as it represents a tougher standard to meet. Further,

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14 Handbook for Analyzing Greenhouse Gas Emission Reductions, Assessing Climate Vulnerabilities, and Advancing Health and Equity, California Air Pollution Control Officers Association, December 2021.

15 T-4 Integrate Affordable and Below Market Rate Housing: 135 affordable housing units/ 755 total units = 17.9% x -28.6 = -5.1% VMT reduction

16 T-18 Provide Pedestrian Network Improvement: ((5.36 miles/.84 miles) – 1) x -0.05 = -26.9% however, maximum VMT reduction = -6.4% VMT reduction

17 T-19A Construct or Improve Bicycle Facility: 75% x (((334 days / 365 days) x (.0038+.0005) x 1 x 1.7) / 9.7) = -.1% VMT reduction

18 T- 25 Extend Transit Network Coverage or Hours: -1 x (23.75 – 22.5/22.5) x .0137 x .7 x .578 x 1 = -0.3% VMT reduction

19 T-23 Provide Community-Based Travel Planning: (755 units / 755 units) x 19% x -12% x 1 = -2.3% VMT reduction

20 Incremental sum: 1-(1-5.1%) x (1-6.4%) x (1-.1%) x (1-2.3%) x (1-.3%) x (1-4.8%) = 13.6% VMT reduction

21 17.71 VMT per capita – 13.6% = 2.41 and 17.71 – 2.41 = 15.31 VMT per capita

22 Technical Advisory on Evaluating Transportation Impacts in CEQA, page 15, Governor's Office of Planning and Research, State of California, December 2018. https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

data for Moorpark's citywide average VMT/capita was not available at the time of the NOP, and when the analysis being undertaken.

Cumulative VMT Analysis and Consistency with RTP/SCS.

Per the OPR Technical Advisory[23], "a finding of a less-than-significant project impact would imply a less than significant cumulative impact, and vice versa". Therefore, since the project has a less than significant impact at the project level, the project has less than significant cumulative impact.

Consistency with the SCAG RTP/SCS is also reviewed. During SCAG's RTP/SCS development, local agencies are consulted during the Local Input and Envisioning Process. The SCAG Data/Map Book for the City of Moorpark shows that Hitch Ranch Specific Plan is included in the General Plan Land Use assumed by SCAG. Therefore, the project is consistent with the growth assumptions applied in the RTP/SCS.

Response to Comment VCTC-2-4

Comment noted. The City of Moorpark is currently undergoing the City's General Plan Update. The Hitch Ranch Specific Plan is included in the City's General Plan Update and revisions to the City's Circulation Element - Bikeway Element will be addressed with the General Plan update.

23 Technical Advisory on Evaluating Transportation Impacts in CEQA, page 6, Governor's Office of Planning and Research, State of California, December 2018. https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf

O-SYB Chumash-1

From: Crystal Mendoza <cmendoza@santaynezchumash.org>
Sent: Friday, February 25, 2022 10:33 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Cc: Kelsie Shroll <kshroll@santaynezchumash.org>
Subject: Hitch Ranch Specific Plan, Moorpark CA

Good morning,

Please find attached a formal letter stating that no further consultation is needed for the above-mentioned project. 1

Thank you,

Crystal Mendoza
Administrative Assistant | Cultural Resource Management
Santa Ynez Band of Chumash Indians | Tribal Hall
cmendoza@santaynezchumash.org
www.sycculture.com

Letter O-SYB Chumash-1 Santa Ynez Band of Chumash Indians

Response to Comment O-SYB Chumash-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

O-SYB Chumash-2

Santa Ynez Band of Chumash Indians
Tribal Elders' Council
P.O. Box 517 ◆ Santa Ynez ◆ CA ◆ 93460
Phone: (805)688-7997 ◆ Fax: (805)688-9578 ◆ Email: elders@santaynezchuhmash.org

February 25,
2022

City of Moorpark
Community Development Department
799 Moorpark Avenue
Moorpark, CA 93021

Att.: Doug Spondello, Planning Manager

Re: Hitch Ranch Specific Plan

Dear Mr. Spondello:

Thank you for contacting the Tribal Elders' Council for the Santa Ynez Band of Chumash Indians.

At this time, the Elders' Council requests no further consultation on this project; however, we understand that as part of NHPA Section 106, we must be notified of the project. 1

Thank you for remembering that at one time our ancestors walked this sacred land.

Sincerely Yours,

Kelsi A. Shroll

Kelsie Shroll
Administrative Assistant | Elders' Council and Culture Department
Santa Ynez Band of Chumash Indians | Tribal Hall
(805) 688-7997 ext. 7516
kshroll@santaynezchumash.org

Letter O-SYB Chumash-2 Santa Ynez Band of Chumash Indians

Response to Comment O-SYB Chumash-2-1

This comment is states that the Tribal Elders' Council for the Santa Ynez Band of Chumash Indians requests no further consultation on this project.

The comment does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Traffic-
We know the project will create traffic. However, what impact will it really have given the limited access to the project? Especially the Gabbert Road piece. Are there further mitigations that can be done to improve the road size (lanes) or access into the area?

People spoke about traffic movement during a wildfire. Some indicated that to leave to the east would be to have them head toward the fire (typical direction of travel they say). How can that be addressed? I know there is no one right answer.

The people of the Ranch's up Gabbert Road, who are more than 1000 feet from the project should be included in the messaging, as it is their access road and I think the city would look good if they informed All of the residents up Gabbert, not just those within 1000' of the project.

I've heard that "Union Pacific will not allow for an upgrade to the Gabbert crossing". Is that true?

What traffic impact will the other approved projects on LA Ave have that will likely be built out prior to this project? Oh, the great unknowns.....

If the Hitch project is reduced in scale, I still don't think people will like it. It is more about all or none, not scaled back from what I hear.

1

Water
Some spoke of how, with our drought, they face water rationing, yet here come 700+ new residences. I, for one, really don't understand how water entitlements work and how there really can be unlimited water for new projects. I just need more info so I'm clear about how it all works.

Air Quality
I don't hear a lot about this and this is not high on my list. I figure the same people who are living life making pollution will just now do it within the city boundaries. As much as this is important, the complaining about this isn't significant out there. Yes there will be more pollution in our city, but it is a necessary part of development.

Aesthetics
As important as this is, it is a necessary off shoot of development. Now, if it were in my daily line of sight, it may be more important to me, however it think it is something that you learn to live with. I need to drive out there and look for myself, but for the vast majority of people, it won't be big and tall, on a ridgeline, or on the top of a hill and the vegetation will likely obscure some of it.

What about solar panels installed on homes after they are built? That to me might look worse than the terracotta roofs they may offer to blend in, but that is well down the road. Having a few more Before and After photo illustrations from more points of view will be helpful to the decision making.

Wildfires
This is really about traffic, but on the surface they look like they have done what they could to protect the homes as much as possible. Getting Fire Equipment in and people out are my greatest concerns. Both in the new community as well as the existing ones. Especially with the animal trailers.

I-Anonymous

Public Transportation stops
I didn't see anything about this, but again, it doesn't seem to be part of the EIR.

Other
I would hope the business community steps up and talks about the benefits to the City Businesses and the School district steps up to discuss enrollment. Again, not a part of the EIR but part of the greater conversation.

1

Douglas Spondello, AICP
Deputy Community Development Director
Community Development Department
City of Moorpark | 799 Moorpark Ave. | Moorpark, CA 93021
(805) 517-6251 | dspondello@moorparkca.gov<mailto:dspondello@moorparkca.gov>
www.moorparkca.gov<http://www.moorparkca.gov/>
http://moorparkgeneralplan.com/
[8d34b513-3cc5-4b73-847e-019d97b3c15f]<http://moorparkgeneralplan.com/>

Letter I-Anonymous Anonymous

Response to Comment I-Anonymous-1

This comment provides a series of questions but does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record.

Regarding project traffic and circulation, as well as cumulative projects that were included in Traffic Impact Analysis (TIA), please refer to Section 3.0, Environmental Impact Introduction, Section 3.15, Transportation and Section 3.10, Land Use, which include full discussions of the City's Circulation Element, as well as project improvements to the multi-modal circulation through the project site.

Regarding the Union Pacific railroad crossing – as discussed on page 3.15-24 of Section 3.15, Transportation, there will be no changes required to the Gabbert Road railroad crossing as the Traffic Impact Analysis (TIA), provided as Appendix 3.10 to the Draft EIR, demonstrates that the build-out of the proposed project along with future traffic increases in traffic volumes do not warrant any improvements at this crossing.

Regarding water supply, please refer to Section 3.17, Utilities and Service Systems, beginning on page 3.18-4.

Regarding air quality impacts, please refer to Section 3.2, Air Quality.

Regarding impacts to aesthetics and visual quality, please refer to Section 3.1, Aesthetics.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

I-Bracken

From: Shane Bracken <sbrackenlax@yahoo.com>
Sent: Saturday, March 19, 2022 3:14 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: New development in Moorpark

Hello I have been told this is the place to voice my opinion of the new development purposed off pointdexter and gabbert.

I would like to just introduce myself my names Shane I live in the butter creek estates in Moorpark Off LA and Tierra rejada I'm a merchant marine who is gone for 6 months of the year and love returning to the semi rural peaceful Moorpark. LA and Tierra rejada are majorly crowded already at school time in the mornings and 4-6 pm by our house it's nearly impossible to make a left turn on Tierra rejada at these times.
LA ave is already far too busy with semi trucks using it as a short cut to skip the grade. I believe this new development will only exacerbate these problems.
I believe it will also ruin the semi rural feel of Moorpark. The open spaces that Moorpark provides is the reason we choose to buy a house here after growing up in the conejo valley, which is now filled with over developed city's like Thousand Oaks and Simi, which have a feel more closely to the valley. Following with it homeless problems, litter, rivers of concrete, over crowded streets filled with traffic, and poor air quality.

1

The open field off pointdexter is a favorite of our family who loves the walk which surrounded by nature, being able to see cattle roaming the field as the train goes by is something that brings a charm to Moorpark.

When every hill is dotted with more square homes and every corner has apartments on it we will surely miss the views, open space, clean air, and peace that Moorpark provides us and that we love so well, and the reasons many of us choose to live here.

I'm not against change, but some times I believe preserving what we have is better in the long run.
Thanks for your time,
Shane

Sent from Yahoo Mail for iPhone

Letter I-Bracken Shane Bracken

Response to Comment I-Bracken-1

The comment provides some introductory remarks and expresses opposition to the proposed project, but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding impacts to aesthetics and visual quality, please refer to Section 3.1, Aesthetics.

Regarding air quality impacts, please refer to Section 3.2, Air Quality.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

I-Bradley

From: Trey Bradley <tbradley3@gmail.com>
Sent: Monday, March 21, 2022 4:26 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Ranch DEIR Public Comment

Mr. Spondello,

In regards to the Hitch Ranch Project and DEIR I would like to voice concern and questions concerning the specific aspect of the railway crossing at Gabbert Road. In summary I believe that the stated Project's plan to not upgrade the railway crossing at Gabbert Road should be changed to require upgrades, or at the least more information needs to be considered in this recommendation. After having reviewed the DEIR and all the traffic assessment support material below are my comments concerning this specific aspect of the project; 1

1. The DEIR states in several places, notably on pages 3.15-23 & 3.15-30 that the traffic impact analysis (TIA) concludes that no changes are required at the Gabbert railroad crossing. However the TIA reports appear to just be assessing the actual intersections/traffic flow. These reports provide very little in an actual physical assessment of the railroad crossing, how it impacts traffic and how capable the actual crossing is. A more thorough evaluation of the crossing's traffic handling ability in its proposed configuration is at minimum warranted. Some form of rail crossing safety assessment and potential upgrade recommendations would likely also be in order at minimum. 2
2. As can not be understated and barely covered in the traffic reports is the large number of people that will need to use the railroad crossing in a fire emergency should the Project move forward. The most likely fire event will involve the fire front approaching from the NE/N from Santa Ana winds during fire season, potentially forcing use of numbered insections 7/47 as opposed to the east side Project exits that would be heading towards a potential fire. Currently there are +/- 50 housing units on Gabbert Road needing to exit in an emergency, this Project calls for another 755 units plus an additional 200-300 units in the city affordable housing lot. This is simply too many people for this railway crossing in an emergency in its current state. Yes, a long term fix of a North Hills Parkway connection to LA Avenue would also be a solution, but that does not appear to be happening any time soon. 3
3. The current condition of the railroad crossing is ok ok but not suited to heavy use. The approach from the south has a moderate dip that causes many cars to "bottom out" and the westbound north turn lane approach from Poindexter is a difficult turn to make without swinging wide into the oncoming traffic that is traveling south on Gabbert. Most importantly if the traffic increases and a queue forms at the Gabbert & Poindexter intersection then cars will often be left awkwardly stopped across the rail tracks. This rail crossing in its current state is just ill suited for high traffic volumes. 4
4. The traffic assessments do not include the housing units from development of the parcel within Hitch Ranch that will be donated to the city for affordable housing, see DEIR Appendix 3.15 Table A-1 for a list of included future projects. It is my understanding this city parcel will likely add another 200-300 housing units within the project site to at least consider as cumulative development if CEQA does not allow it to be included as part of the actual project. 5

5. The traffic projections appear to show a very high percentage of the Project only traffic coming & going from the eastern intersections (35, 36 & 40) and disproportionately low traffic in the single western intersection (47). For example see DEIR Appendix 3.10, Figure 3.10-4e & 5e showing Project trips only. 4e (AM Peak) shows 65 trips exiting the site from intersection 47 while showing 258 trips exiting the site from intersections 35+36+40. Similar results are seen in Figure 5e of 68 trips vs 149. The traffic assessment may be understating the number of vehicles traveling to the western exodus of the project vs the eastern exodus. 6
6. It is my opinion that projected Project only traffic that will cross the Gabbert & Poindexter railroad crossing is too low. Intersection 7 (Gabbert & Poindexter) shows current peak volumes of 55 (AM, Figure 3.10-6a) and 50 (PM, Figure 3.10-7b) crossing the rail tracks from both directions as of existing 2019 with no Project. This compares to Project only volumes of 92 (AM, Figure 3.10-4a) and 126 (PM, Figure 3.10-5a). While the Project forecasts almost double the new trips in the AM and slightly over double in the PM the project is approaching x20 the size of the current Gabbert community that makes up the 2019 baseline. I believe the traffic assessment to be underestimating the volume increase at insection 7 and the railroad crossing if the Project were to move forward. 7
7. The projected Project traffic assumes an increased use of public transport (Metrolink) compared to current city average, see DEIR page 3.15-29. At best this is a reach for assuming a project impact baseline, I suggest a more standard level of public transport be used for analysis, which will increase Project vehicle trips. 8
8. Note DEIR Appendix 3.10 is missing Figure 3.10-4a, as Figure 3.10-4b is included twice in consecutive pages in likely error. 9

Regards,

Dale Bradley
Moorpark Resident

Letter I-Bradley Dale Bradley

Response to Comment I-Bradley-1

The comment expresses an opinion that the project should be required to upgrade the railway crossing at Gabbert Road, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record:

Regarding the Union Pacific railroad crossing – as discussed on page 3.15-24 of Section 3.15, Transportation, there will be no changes required to the Gabbert Road railroad crossing as the Traffic Impact Analysis (TIA), provided as Appendix 3.10 to the Draft EIR, demonstrates that the build-out of the proposed project along with future traffic increases in traffic volumes do not warrant any improvements at this crossing.

Response to Comment I-Bradley-2

The comment expresses an opinion that there should be an evaluation of the railway crossing at Gabbert Road traffic handling ability, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record:

As discussed in above, the build-out of the proposed project along with future traffic increases in traffic volumes do not warrant any improvements at the railway crossing.

Response to Comment I-Bradley-3

The comment raises concerns regarding wildfire hazards and the lack of an 'adequate evacuation route', but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response

is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record:

The Ventura County Fire Department (VCFD) has thoroughly reviewed the Draft EIR, particularly Section 3.8, Hazards and Hazardous Materials, Section 3.13, Public Services, and Section 3.18, Wildfire, including their related appendices. The VCFD also tendered a 6-page memorandum which includes the VCFD's conditions for approval for the proposed project (refer to Comment **A-VCFD-3**, included above).

In addition, the following information is included on page 3.13-6, in Section 3.13, Public Services:

> ***Anticipated Frequency and Nature of Emergency Occurrence (Special Fire Protection Problems).*** The frequency and nature of future emergency calls is difficult to predict. No uses allowed in the Specific Plan are unusual or have the potential to generate an unusual number or type of calls for service. However, the Specific Plan site is located in an area designated as a "Hazardous Fire Area." Construction would, therefore, be required to comply with all applicable building and fire code requirements. These requirements may include items such as types of roofing materials, building construction, brush clearance, fire hydrant flows, hydrant spacing, access and design, and other hazard reduction programs, as set forth by VCFD. With the implementation of standard conditions and requirements as outlined below, potential fire hazard impacts would be reduced to less than significant levels. Refer also to **Section 3.18, Wildfire** in this EIR.

The VCFD has not disputed these statements.

Response to Comment I-Bradley-4

This comment states an opinion that the current condition of the railroad crossing is 'ill suited to heavy traffic volumes,' but does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Bradley-1** and **Response to Comment I-Bradley-2.**

Response to Comment I-Bradley-5

The commenter's assertion that the TIA does not include the 333 housing units proposed for the City Donation parcel is incorrect.

This housing is included as project 1 on **Table 3.0-2, Cumulative Development Projects Including the Proposed Project** on page 3.0-7, and identified on **Figure 3.0-1a, Map of Cumulative Development Projects** on page 3.0-5, of Section 3.0, Environmental Impact Analysis, as well as provided in Table 2 on page 3 of the *Supplemental Traffic Analysis for the Hitch Ranch Project in the City of Moorpark*, conducted by Stantec, December 2021, provided in Appendix 3.15 of the Draft EIR. In both cases, the project is identified as 'Casey Road City Parcel'. As such, the city donation parcel, and the anticipated affordable housing project was included in both the original and supplemental traffic analyses.

Response to Comment I-Bradley-6

The comment expresses an opinion that the TIA understates the direction of travel for future traffic in the analysis, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Bradley-7

The comment expresses an opinion that the TIA underestimates the future traffic volumes at the intersection of Gabbert and Poindexter in the analysis, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Bradley-8

The comment expresses an opinion that a different level of public transport use should have been used in the analysis, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment VCTC-2-3.**

Response to Comment I-Bradley-9

Comment noted.

A revision will be made in the Final EIR to include the figure. Please refer to Section 3.0, Revisions to the Draft EIR, Section 3.10, Land Use.

I-Bruckner-1

From: GAYLE BRUCKNER <wynnranch@prodigy.net>
Sent: Monday, April 04, 2022 2:42 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>; Gayle Bruckner <wynnranch@prodigy.net>
Subject: Hitch Ranch Development concerns

Dear Douglas,

One of Many concerns:

Hitch Ranch Project Concerns:

Aesthetics per the Moorpark General Plan Land Use Element

1

1) How does the Hitch Ranch Project fit into the Moorpark General Plan? It appears the plan violates the Moorpark General Plan Land Use Element and it's goals and the policies. The plans intent is to take the hills down to 70 feel and to bring the low areas up to 61 feet. This does not meet the intent of the following:

a. Goal 16 stated that we will 'Enhance and maintain the suburban/rural identity of the community".

i. Policy 16.2 "Hillside development standard shall be adopted which restrict grading on slopes greater than 20 percent and which will encourage the preservation of visual horizon lines and significant hillsides as prominent visual features".

ii. Policy 16.4 “New Residential development should complement the overall community character of the City, establish a sense of place, and ensure capability with important existing local community identities”.

iii. Policy 17.1 “New Development shall be compatible with the scale and visual character of the surrounding neighborhood.”

iv. Policy 17.7 “Design features which provide relief and separation shall be required between land uses of conflicting character.”

1

Letter I-Bruckner-1 Gayle Bruckner

Response to Comment I-Bruckner-1-1

The comment expresses an opinion that the project violates the Moorpark General Plan, specifically Goal 16, which calls for the City to 'Enhance and maintain the suburban/rural identity of the community'.

Analysis in Section 3.10, Land Use, on page 3.10-23 finds that:

> The Specific Plan creates a community that enhances Moorpark's identity by concentrating higher density residential areas near the historical downtown while transitioning to more suburban and rural residential areas in the hills. The Specific Plan landscape and architectural design guidelines reflect the historic Early California and rural architectural character that distinguishes the Moorpark community.

A discussion of the projects impacts to the site topography is included in Section 3.1, Aesthetics, beginning on page 3.1-18 and includes the following:

> From a visibility/view perspective, most of the "prominent" slopes or ridgelines are preserved; the larger slopes north of Planning Area 1 (Area B on **Figure 3.1-15, Hillside Grading Area Identification Map**), the larger slopes west of Gabbert Road (Area A on **Figure 3.1-15, Hillside Grading Area Identification Map**), and the existing ridgeline/knoll southwest of Planning Area 2 (Area C on **Figure 3.1-15, Hillside Grading Area Identification Map**).
>
> Much of the site was graded for ranching and farming purposes sometime in the last century so most impacts to the existing topography are not impacts to natural slopes because the natural grade has long since been disturbed.

The project overall would largely be consistent with the Hillside Management Ordinance. Further, Chapter 17.38.030 M of the Hillside Management Ordinance allows the City to approve a Development Agreement to exempt a project from the requirements of the Ordinance. The applicant will be requesting a Development Agreement for this project and an exemption will be required. Once negotiated and granted, impacts related to the Hillside Management Ordinance would be considered less than significant.

It should be noted that the analysis in the Draft EIR finds that certain impacts to aesthetics would be significant and unavoidable, i.e., scenic vistas.

I-Bruckner-2

From: GAYLE BRUCKNER <wynnranch@prodigy.net>
Sent: Monday, April 04, 2022 3:07 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>; GAYLE BRUCKNER <wynnranch@prodigy.net>
Subject: Re: Hitch Ranch Development concerns

Douglas,

Additional concerns:

2) How does Moorpark plan to mitigate the significant impact with respect to Valley Fever? 1

3) How does Moorpark plan to measure success as it relates to AQMP? It claims success in the Environmental impact report but none of the listed programs are actually used by the general public. 2

4) This plan adds over 1000 homes - How does Moorpark plan to meet the requirements of Page 3-2-10 of the Environmental Impact report? The report calls out the Land Use Element which states the following air quality goals and policies of the city of Moorpark General Plan that are applicable to the proposed Hitch Ranch Specific Plan Project:

a. Goal 15: "Maintain a high quality environment that contributes to and enhances the quality of life and protects public health, safety, and welfare." 3

i. Policy 15.4: Development which will not result in a negative impact on air quality shall be encouraged in order to maintain and enhance air quality for the health and well-being of City

residents.

5) This plan adds over 1000 homes (which will equate to at least 2000 additional cars on our streets) - How does Moorpark plan to meet the requirements of Page 3-2-10 of the Environmental Impact report? The report calls out the Circulation Element which states the following Traffic goal and policy in the city of Moorpark General Plan that are applicable to the proposed Hitch Ranch Specific Plan Project:

3

4

a. Goal 7: "Develop and encourage a transportation demand management system to assist in mitigating traffic impacts and in maintaining a desired level of service on the circulation system."

On Monday, April 4, 2022, 02:41:47 AM PDT, GAYLE BRUCKNER <wynnranch@prodigy.net> wrote:

Dear Douglas,

One of Many concerns:

Hitch Ranch Project Concerns:

Aesthetics per the Moorpark General Plan Land Use Element

1) How does the Hitch Ranch Project fit into the Moorpark General Plan? It appears the plan violates the Moorpark General Plan Land Use Element and it's goals and the policies. The plans intent is to take the hills down to 70 feel and to bring the low areas up to 61 feet. This does not meet the intent of the following:

a. Goal 16 stated that we will 'Enhance and maintain the suburban/rural identity of the community".

i. Policy 16.2 "Hillside development standard shall be adopted which restrict grading on slopes greater than 20 percent and which will encourage the preservation of visual horizon lines and significant hillsides as prominent visual features".

ii. Policy 16.4 "New Residential development should complement the overall community character of the City, establish a sense of place, and ensure capability with important existing local community identities".

iii. Policy 17.1 "New Development shall be compatible with the scale and visual character of the surrounding neighborhood."

iv. Policy 17.7 "Design features which provide relief and separation shall be required between land uses of conflicting character."

5

Letter I-Bruckner-2 Gayle Bruckner

Response to Comment I-Bruckner-2-1

The comment expresses an opinion that the project will cause a significant impact with regard to Valley Fever, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comment. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record.

Pages 3.2-20 and 3.2-28 of Section 3.2, Air Quality provide a discussion and disclosure of the potential impacts of Valley Fever as a result of project implementation; implementation of construction mitigation measure MM AQ-1 would mitigation potential impacts to a less than significant level.

Response to Comment I-Bruckner-2-2

The comment expresses an opinion with the claim that as it relates to the AQMP, 'none of the listed programs are actually used by the general public', but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comment. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Bruckner-2-3

Page 3.10-22 in Section 3.10, Land use provides the following discussion about the project's consistency with Goal 15:

> The quality of life in a community is shaped by factors including natural environment, built environment, cultural and social environments. The Hitch Ranch Specific Plan composes these elements to contribute to the quality of life for all Moorpark residents. Specifically, the Specific Plan concentrates development areas to preserve natural features and open space. The plan focuses the highest density development in the closest proximity to the downtown commercial core, civic center and Metrolink transportation hub. Cognizant of the rural nature toward the west and north

of the project boundary, larger lots have been purposefully placed to create a softer transition from open space to the built environment.

Landscape and lighting features will be sensitive to the environment, as well as comply with Moorpark standards and Title 24 *CalGreen* codes The network of trails, parks and natural open space create an active, outdoor-oriented community that creates opportunities for social interaction benefiting existing and future residents of Moorpark. Residents of neighborhoods that are currently underserved would have access to the network of trails in the Specific Plan area.

Response to Comment I-Bruckner-2-4

Page 3.10-32 in Section 3.10, Land use provides the following discussion about the project's consistency with Goal 7:

The Hitch Ranch Specific Plan includes bikeways and trails that will encourage the use of alternative transportation by connecting to the City's bike and trail system. Additionally, the Project will provide housing in close proximity to transit (bus and Metro) and employment opportunities.

Response to Comment I-Bruckner-2-5

Please refer to **Response to Comment I-Bruckner-1-1**.

I-Bruckner-3

From: GAYLE BRUCKNER <wynnranch@prodigy.net>
Sent: Monday, April 04, 2022 3:15 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>; GAYLE BRUCKNER <wynnranch@prodigy.net>
Subject: Re: Hitch Ranch Development concerns

And More:

6) Why does North Hills Parkway exist in this plan??? It is my understanding that the Truck Bypass which has been referred to as North Hills Parkway in the past, has been relocated behind 'Pinnacle' near the Rustic Hills Golf Course. So why is this still on this project map? And What is the purpose of dumping an additional 2000+ cars onto Gabbert Road which is already stressed and has a hard limitation for exiting of only two lanes over the railroad tracks?! This is not only a traffic issue, it is a HUGE safety issue for our community!

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On Monday, April 4, 2022, 03:07:05 AM PDT, GAYLE BRUCKNER <wynnranch@prodigy.net> wrote:

Douglas,

Additional concerns:

2) How does Moorpark plan to mitigate the significant impact with respect to Valley Fever?

3) How does Moorpark plan to measure success as it relates to AQMP? It claims success in the Environmental impact report but none of the listed programs are actually used by the general public.

4) This plan adds over 1000 homes - How does Moorpark plan to meet the requirements of Page 3-2-10 of the Environmental Impact report? The report calls out the Land Use Element which states the following air quality goals and policies of the city of Moorpark General Plan that are applicable to the proposed Hitch Ranch Specific Plan Project:

a. Goal 15: "Maintain a high quality environment that contributes to and enhances the quality of life and protects public health, safety, and welfare."

i. Policy 15.4: Development which will not result in a negative impact on air quality shall be encouraged in order to maintain and enhance air quality for the health and well-being of City residents.

5) This plan adds over 1000 homes (which will equate to at least 2000 additional cars on our streets) - How does Moorpark plan to meet the requirements of Page 3-2-10 of the Environmental Impact report? The report calls out the Circulation Element which states the following Traffic goal and policy in the city of Moorpark General Plan that are applicable to the proposed Hitch Ranch Specific Plan Project:

a. Goal 7: "Develop and encourage a transportation demand management system to assist in mitigating traffic impacts and in maintaining a desired level of service on the circulation system."

On Monday, April 4, 2022, 02:41:47 AM PDT, GAYLE BRUCKNER <wynnranch@prodigy.net> wrote:

Dear Douglas,

One of Many concerns:

Hitch Ranch Project Concerns:

Aesthetics per the Moorpark General Plan Land Use Element

1) How does the Hitch Ranch Project fit into the Moorpark General Plan? It appears the plan violates the Moorpark General Plan Land Use Element and it's goals and the policies. The plans intent is to take the hills down to 70 feel and to bring the low areas up to 61 feet. This does not meet the intent of the following:

a. Goal 16 stated that we will 'Enhance and maintain the suburban/rural identity of the community".

i. Policy 16.2 "Hillside development standard shall be adopted which restrict grading on slopes greater than 20 percent and which will encourage the preservation of visual horizon lines and significant hillsides as prominent visual features".

ii. Policy 16.4 “New Residential development should complement the overall community character of the City, establish a sense of place, and ensure capability with important existing local community identities”.

iii. Policy 17.1 “New Development shall be compatible with the scale and visual character of the surrounding neighborhood.”

iv. Policy 17.7 “Design features which provide relief and separation shall be required between land uses of conflicting character.”

Letter I-Bruckner-3 Gayle Bruckner

Response to Comment I-Bruckner-3-1

This comment asks a series of questions regarding North Hills Parkway and the City's circulation system but does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

I-Diamond

From: Jennifer Diamond <jndiamond@att.net>
Sent: Sunday, April 03, 2022 8:53 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Ranch DEIR

Dear Doug,
Thank you for taking the time to consider our concerns about the Hitch Ranch project. I have been a resident of Gabbert Road since 1998.
I have a lot of concerns about the project in regards to the DEIR, but I will focus on my greatest concern and safety issue.
Traffic! The amount of increased traffic and the proposed traffic pattern at Gabbert Road, will cause a huge safety issue for evacuating during wild fires.
I truly hope that you will consider a different traffic pattern, including an alternative exit for the existing residence on Gabbert Road.
I have had to evacuate my family and my horses several times since living here, and it is already terrifying enough without having to deal with a bottle neck at the bottom of the road, and a huge increase in traffic.
Thank you for considering my safety concern.
Jennifer Diamond
6151 Gabbert Road
805-377-5560

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Letter I-Diamond Jennifer Diamond

Response to Comment I-Diamond-1

This comment expresses concern regarding increased traffic and the City's circulation system but does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

I-Diana

From: Diana S. <dianas101@hotmail.com>
Sent: Saturday, March 19, 2022 9:02 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>; Diana S. <dianas101@hotmail.com>
Subject:

So many new homes in Moorpark would overload our traffic as well as overuse water with our extreme drought situation that is ongoing.
Thanks,
Diana S.

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Sent from Mail for Windows

Letter I-Diana Diana S

Response to Comment I-Diana-1

This comment expresses concern regarding increased traffic water supply but does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

Regarding water supply, please refer to Section 3.17, Utilities and Service Systems, beginning on page 3.18-4.

I-Hartley

From: Connie Hartley <conniehartley9@hotmail.com>
Sent: Wednesday, March 16, 2022 1:04 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Project

To Whom it may concern:

I moved to Moorpark 33 years ago from Thousand Oaks specifically for the small town feel. I have been pleased that previous proposed projects surrounding Moorpark have been denied as I do not want to live in an area similar to the San Fernando Valley.
Traffic on LA Avenue through Moorpark has been horrendous for quite awhile as it is, and our exits, with respect to fire and emergency situations are questionable. I could go on and on!
Bottom line I am NOT in favor of these proposed projects.
Let the developers put their money elsewhere!
Thank You,
Connie Hartley

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Letter I-Hartley Connie Hartley

Response to Comment I-Hartley-1

The comment provides some introductory remarks and expresses opposition to the proposed project but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding impacts related to fire protection, please refer to Section 3.13, Public Services, beginning on page 3.13-2.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

I-Jacobs

From: Robert Jacobs <rjacobs1013@gmail.com>
Sent: Thursday, March 31, 2022 9:59 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Ranch Project

Doug,

It was a pleasure speaking with you today about the Hitch Ranch Project. I am a member of GPAC whose goal is to consider how Moorpark will look in 2050. Included in our goals and objectives are the esthetics of Moorpark and to not replicate the urban development / blight of the San Fernando Valley. The Hitch Ranch Project, adding a possible 755 homes plus additional low income housing, will crowd our city unless there are improvements in the following areas.

These include infrastructure, increased traffic, lack of emergency escape routes (one road in and one road out over a railroad crossing), increased demand for water, police, fire and schools. As we move toward sustainable resources, the Hitch Project will only take a step backward. Additionally, Hitch Ranch is in a liquefaction zone, subject to wildfires, flooding, and power outages (as we have already seen in Moorpark numerous times).

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I highly recommend EIR alternatives including a reduction in the number of proposed homes to 400. There is no doubt that Moorpark needs more housing but it needs to be safe and practical for all residents, current and future.
Any future developments in Moorpark need to enhance the city and not produce undue burden on its resources and residents.

Thank you,
Bob Jacobs

--
Robert Jacobs
818-389-3797

Letter I-Jacobs Robert Jacobs

Response to Comment I-Jacobs-1

The comment provides some introductory remarks and recommends the implementation of one of the alternatives to the proposed project but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following is provided for the record:

As stated in Section 15126.6(a) of the *CEQA Guidelines*, an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparable merits of the alternatives. However, an EIR need not consider every conceivable alternative to a project. The Draft EIR provides a range of potential alternatives to the proposed project which includes those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. See Section 4.0, for a comparison of the major components associated with the Project and three alternatives that include Alternative 1 – No Project/No Development Alternative, Alternative 2: RPD 20U-N-D Alternative, and Alternative 3 – 415 Unit Reduced Visual Impact Alternative.

Regarding impacts related to liquefaction and other geotechnical issues, please refer to Section 3.6, Geology and Soils.

Regarding impacts related to stormwater and flooding, please refer to Section 3.9, Hydrology and Water Quality.

Regarding impacts related to fire and police protection and local schools, please refer to Section 3.13, Public Services.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

Regarding water supply and the electrical grid, please refer to Section 3.17, Utilities and Service Systems, beginning on page 3.18-4.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

I-Jarvis

From: Ryan Jarvis <redjar83@gmail.com>
Sent: Sunday, April 03, 2022 10:42 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Ranch Specific Plan

Hello Mr. Spondello,

I am emailing you in regards to the proposed Hitch Ranch Plan. My name is Ryan Jarvis and I am a resident of Moorpark living off of Charles St. I want to express my opinion on this plan. I am **opposed** this plan. My concerns are: higher population for a city that prides itself on being small and personable; removes the beauty of what is mostly untouched scenic land (the rolling hills) to be replaced by structures; exacerbates an already congested commute through Moorpark (i.e. Fillmore via Spring, old 118 to the rest of Ventura County, Santa Rosa pass etc); and to first focus on improving what is already established in Moorpark to attract people to come shop, eat, and seek entertainment as a destination.

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In short, I do not want the Hitch Ranch Specific Plan to move forward. I **do not** want the hills carved out as a trade off for higher population and congestion.

Thank you for the time and consideration of my comments and thoughts on this matter.

--

Ryan Jarvis

"For wisdom is far more valuable than rubies. Nothing you desire can compare with it."

-Proverbs 8:11

Letter I-Jarvis Ryan Jarvis

Response to Comment I-Jarvis-1

The comment provides some introductory remarks and expresses opposition to the proposed project but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding impacts to aesthetics and visual quality, please refer to Section 3.1, Aesthetics.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

I-Leavitt

From: Adam Leavitt <leavitt.adam@gmail.com>
Sent: Saturday, April 02, 2022 9:45 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch project

Mr. Spondello-

My family and I are very much against the project. Please add my name to the list of people who will be informed of the next meeting.

Adam

1

Letter I-Leavitt Adam Leavitt

Response to Comment I-Leavitt-1

The comment expresses opposition to the proposed project but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

I-Mayfield

April 4, 2022

D. Spondello
City of Moorpark
Planning Dept.

I want to address an issue not adequately addressed in the Draft Environmental Impact Report.

The proposed project includes 755 homes to be built by the developer and another 333 built by the City of Moorpark for a total of 1,088 homes in this one project. There have also been an additional 800 units approved already that will directly access the same roads for a total of an additional 1,888 homes in downtown Moorpark. All of the planned roads in this project exit onto State Highway 23 (Walnut Canyon Rd/Moorpark Avenue) on the east or onto Gabbert Road at the west. The project will result in over 10,000 trips onto State Highway 23 and Gabbert each day. Both State Highway 23 and Gabbert are two lane roadways. On the west side 6 lanes of travel from the project will be reduced to the existing 2 lanes and on the east side 10 lanes of travel will be reduced to the 2 lanes on State Highway 23. There are no plans to widen State Highway 23 any time in the near future. There are also no plans to widen Gabbert at the railway crossing, nor Gabbert south to State Highway 118.

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This project dumping onto a state highway is SIGNIFICANTLY important. Because State Highway 23 belongs to the State of California, the City has very limited control on this roadway. And let's not forget State Highway 23 is already a significant artery for 3 rock and sand plants, traffic from Fillmore, Walnut Canyon School, City Hall, Library, Chaparral Middle School, the Boys and Girls Club, as well as all of the downtown neighborhoods. And on the west side of the project, Gabbert itself is currently busy with traffic from the industrial area, Chaparral Middle School, the Moorpark Estates, and Poindexter Park. Further impacting both State Highway 23 on the east and Gabbert on the west is the railway cutting thru the center of town and both roadways.

This Draft EIR describes the project as helping with circulation within Moorpark. The circulation only benefits the project itself. All of the rest of Moorpark will be stuck with the new traffic. On social media sites, the number one reason residents say they don't shop downtown is because they don't want to deal with the 118 traffic. So now even residents willing to tackle the 118 to come to the downtown/High Street area to shop and dine will have to contend with heavy traffic there as well.

I-Mayfield

In order for a project of this size to be developed, much of the arterial infrastructure in other parts of the City would need to be addressed first. The reason residents of Moorpark voted to become a city was to take control of our growth because under the County of Ventura's control, projects were approved without road, school and other infrastructure in place. This caused our community a lot of grief and financial resources for many decades.

I know I don't have to remind this Commission of the 30 years it has taken so far simply to get the Princeton repaving project to move forward because it was state highway. And for decades the City has been telling residents that they can't do anything about traffic on Highway 118 because its a state highway. It is not fair to ask the residents of Moorpark to tolerate traffic problems in downtown for another 30 years as the City has to try to work with the State to mitigate the traffic problems this project will create. 1

William M. Mayfield
6085 Darlene Lane
Moorpark, CA 93021

Letter I-Mayfield William Mayfield

Response to Comment I-Mayfield-1

The comment raises concerns regarding the TIA for the proposed project and states that the 'project will result in over 10,000 trips onto State Highway 23 and Gabbert each day', but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Further, for the record, Table 3.10-5 found on page 13 of the updated TIA in Appendix 3.10 of the Draft EIR shows that daily Project Traffic Generation for the proposed project would be a total of 6,436 trips, 4,301 attributed to the single-family residences, 2,401 attributed to the multi-family residences, and 4 attributed to the public park.

I-Mikos

Roseann Mikos, Ph.D.
14371 E. Cambridge Street • Moorpark, CA 93021 • 805-529-4828 or 805-878-3300

April 4, 2022

City of Moorpark
Doug Spondello, Deputy Community Development Director
799 Moorpark Ave.
Moorpark, CA 93021

RE: Comment Letter: Hitch Ranch Draft Environmental Impact Report (DEIR)

Dear Mr. Spondello and other interested parties,

Please accept this letter as part of the official record for the above referenced project. First of all, let me make it clear that I am not opposed to the project, per se, as it is the last parcel left from the original Moorpark General Plan and it should be built in some form. 1

ALTERNATIVES ANALYSIS

However, it appears that the DEIR has not taken into consideration (and should do so) certain comments in crafting **alternatives** to the project as proposed, specifically as noted in the August 26, 2019 letter from the Santa Monica Mountains Conservancy (SMMC) to include alternatives that would:

- "…."reduce the extensive grading footprint by 20 and 50 acres respectively, and add commensurate acres of permanent natural open space to the upper northwest region of the property with connectivity to other natural lands."
- Take into consideration the analysis of "alternatives that include higher capacity and/or more numerous detention basins and designate detention basin(s) that will be allowed to accrue natural debris and support native vegetation for habitat. DEIR alternatives with reduced impervious surface area would better recharge groundwater and require less basin area and basin maintenance and must be included in the DEIR….

  …Despite habitat fragmentation this project proposes, 'naturalized' detention basins can provide multiple benefits: slow storm water rates allowing for increased infiltratiohn, improved water quality via soil filtration and micro-organism activity, habitat refugia amidst urbanization, reduce heat-islanc effects of urbanization, and provide scenic resources for passibe recreation." 2

As also stated by the SMMC: "…every opportunity to retain storm flows that would normally support riparian habitat and recharge impacted groundwater basins **must be evaluated in the DEIR** " (emphasis added).

I would like to point out that whether the proposed North Hills Parkway is to be a four-lane or a two-lane road needs to be addressed as well, since if only a two lane road, it would allow for more open space, as requested by the SMMC. When the North Hills Parkway was originally envisioned it was prior to learning other considerations that might only require a two-lane road. This needs to be evaluated in light of this project. 3

Why does Alterative 3 as proposed have NO AFFORDABLE HOUSING? That is unacceptable! The alternatives in general are weak and do not try to meet the project objectives! If there was a smaller footprint for some of the homes that are the higher end homes (assuming a lesser footprint for North Hills Parkway), you could get more market rate housing on a smaller footprint to meet more developer 4

project objectives while also being more sensitive to the environment. YET, there is NO alternative that even contemplates that! This is surprising, to say the least, and more than unacceptable. 4

RE: Donation Parcel for Basin 3 (Passive Park)

Why is this a "donation" parcel (7.23 acres)? This should be part of the main project of the developer! And the HOAs should have to include it in maintenance, NOT the city for the affordable housing part of the donation parcel. There is something wrong with that picture and it needs to be re-evaluated. The developer appears to want to offload the detention basin costs onto the city instead of paying for them with the project. I hope that is not the case, but that is what is seems. If so, that is unacceptable, to say the least! This should NOT be part of the "by right" affordable housing donation parcel. 5

RE:LIGHTING ALTERNATIVES

The DEIR is proposing high pressure sodium lights, instead of mercury vapor! Why are they not proposing LED lights for a more environmentally friendly kind of lighting? It is as if the OLD DEIR from 20 years ago is being regurgitated when we have come a long way since then for lighting. This needs to be revisited and changed to join the modern world! 6

SUMMARY

There are probably other things that I should have brought up, but these are perhaps the most important. 7

Thank you for the opportunity to provide these comments and I look forward to your responses to them.

Sincerely,

Roseann Mikos

Roseann Mikos, Ph.D.
Former Moorpark City Councilmember and Interested Private Citizen

Letter I-Mikos Roseann Mikos

Response to Comment I-Mikos-1

The comment provides some introductory remarks and expresses guarded support for the proposed project but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Mikos-2

As stated in Section 15126.6(a) of the CEQA Guidelines, an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project and evaluate the comparable merits of the alternatives. However, an EIR need not consider every conceivable alternative to a project. The Draft EIR provides a range of potential alternatives to the proposed project which includes those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. See Section 4.0, for a comparison of the major components associated with the Project and three alternatives that include Alternative 1 – No Project/No Development Alternative, Alternative 2: RPD 20U-N-D Alternative, and Alternative 3 – 415 Unit Reduced Visual Impact Alternative.

Further, as discussed in Section discussed in Section 3.9, Hydrology and Water Quality, and in Appendix 3.9, build-out of the Hitch Ranch Specific Plan will include four detention basins, which will retain storm flows on site for percolation into groundwater.

Response to Comment I-Mikos-3

As discussed and disclosed in the Section 2.0, Project Description, on page 2.0-15, and Section 3.10, on page 3.10-31:

> North Hills Parkway would be developed as a four-lane road, consisting of two vehicle-travel lanes plus bike lanes (in each direction) with a total right-of-way corridor dedication width of 200 feet with controlled access and restricted parking. A 14-foot wide landscaped median would be provided. The roadway also includes a 14-foot wide parkway section. The north side of the parkway would provide for a 12-foot wide multi-use trail. Bike racks will be installed at all active park and recreation areas.

As discussed on page 2.0-21 of Section 2.0, Project Description, the General Plan Amendments to be adopted as part of implementation of the proposed project would include the following amendment to the Circulation Element:

> **Circulation Element**: Amend to include the extension of High Street to Gabbert Road. Under the current General Plan Circulation Element High Street terminates east of Hitch Ranch at Moorpark Avenue. The High Street roadway presently extends westerly approximately 700 feet beyond Moorpark Avenue to provide access to the United States Post Office. The additional extension to connect to the Hitch Ranch property will provide a secondary access point for the Post Office and improve east/west circulation within the portion of the City north of the Union Pacific Railroad tracks. High Street will be built as a two-lane collector roadway with traffic calming roundabouts within the Specific Plan. The Circulation Element is also to be amended to reduce North Hills Parkway from a six-lane arterial roadway to a four-lane arterial roadway, along with the deletion of a traffic signal at North Hills Parkway and Gabbert Road. The current General Plan Circulation Element also shows a conceptual alignment for Casey Road that would not be feasible due to the hilly landforms of the Hitch Ranch property. The current Circulation Element Casey Road conceptual alignment also terminates on the west end at an impractical location too near to the intersection with the currently-designated six-lane and signalized North Hills Parkway. With the proposed Circulation Element Amendment both "A" Street and Meridian Hills Drive will be added as Local Collector roads originating at Walnut Canyon Road on the north and terminating at High Street extension on the south. Casey Road will terminate on the west at "A" Street. These General Plan Circulation Element Amendments will create additional routes of vehicle circulation through interconnection that was not anticipated at the time that the 1992 General Plan Circulation Element was last updated.

Response to Comment I-Mikos-4

Please refer to **Response to Comment I-Mikos-2**

Response to Comment I-Mikos-5

The comment takes issue with the donation of land by the project applicant to the City for a public park, however, it does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Mikos-6

The comment takes issue of the type of lighting recommended in the mitigation measure; however, it does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

For the record, mitigation measure **AES-3** requires that:

> Prior to issuance of a grading permit, a lighting plan prepared by a lighting consultant consistent with the Specific Plan Design Guidelines Lighting Concept shall be submitted to the City of Moorpark Department of Community Development for review and approval by the Community Development Director. The lighting plan shall incorporate 0.5 foot-candle as a threshold for spill and the minimum streetlamp glare level of 2.0 foot-candles. All fixtures shall utilize shields to direct light downward, and the lighting plan shall also incorporate other "dark sky" friendly measures to the extent feasible.

Review and approval of the lighting plan by the City of Moorpark Department of Community Development would ensure that current lighting concepts would be utilized by the proposed project.

Response to Comment I-Mikos-7

The comment is a conclusory remark and does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

I-Miller-1

From: Doris Miller <dorisdebby@hotmail.com>
Sent: Monday, April 04, 2022 3:26 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: DEIR Specific Plan I

Mr. Spondello:
I am attaching a PDF of my comments addressing what I consider inadequacies of the DEIR. I exceeded your 500 word request and I'm sorry. I felt what I said was necessary to explain my analyses. Please let me know if you received this. I sent an email through my gmail account and it just disappeared. If you end up getting 2, sorry to waste your time.
Doris Miller

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Sent from Mail for Windows

Letter I-Miller-1 Doris Miller

Response to Comment I-Miller-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

I-Miller-2

April 4, 2022

Doug Spondello, Deputy Community Development Director
City of Moorpark
Moorpark, CA

Re: Specific Plan I: Hitch Ranch DEIR

According to the City of Moorpark Safety Element for 2000-2005, "CEQA provides a means by which City officials and the public can identify the potential impacts a project will have on a community, and to allow for mitigation or avoidance of such impacts." I have reviewed the DEIR very carefully and find it to be deficient in those areas pertaining to hazard management and mitigation, water availability, and electrical availability. I do not believe the analyses given are current or appropriate for the proposed population density for this project plus the changes to the circulation pattern servicing this project. Therefore, neither City officials nor the public can garner a true picture of the actual costs associated with this project. The Ventura County Multi-Jurisdictional Mitigation Plan Update 2022 makes the following deficiencies very apparent: 1

1. **Extent of wildfire hazard**, especially the lack of an adequate evacuation route for the northwestern side of the city. All reliable sources point to continued and increasing chances for wildfire particularly in the northwestern part of the city. Evacuation of approximately an additional 2000 residents, if this project is approved, plus the current residents of Gabbert Canyon and their animals, amount to newspaper headline disaster nightmares that make the deaths in Paradise, CA seem minor in comparison. Dumping traffic from a four-lane arterial, without signalization, onto what becomes a narrow two-lane road over a railroad track, with a raging wildfire and dense smoke is, in my opinion, highly negligent. If I can see the inherent dangers, engineers should certainly be able to see them! 2
2. **Climate Change** has not been depicted to have near the expected impacts in the report as has been predicted by reliable sources. All indications are that Santa Ana Winds, storms, drought, and environmental dryness will play key roles in the welfare of our community. The ten hottest years since 1880 have occurred since 2005. These warmer temperatures also cause greater evaporation to our plant life, soils, and reservoirs. 3
3. **Train derailments** are quite possible due to human caused track interference, poor operator behaviors, or traffic accidents. Three very critical areas are on Moorpark Avenue, Spring Road, and Gabbert Road. If the trains are carrying hazardous chemicals, the disaster simple increases in size and health and safety effects. 4
4. **Aircraft incidents** have increased in likelihood with Edison's use of helicopters to assess power equipment issues and complete changes to their equipment. In addition, there appears to be much greater military activity lately.
5. **Water Availability:** It is difficult to believe there will be adequate water for a new development of this size when on 03/17/2022, NOAA forecasters predicted that the drought gripping California and much of the West will persist and worsen…there will also be hotter-than-normal temperatures, reduced chances of rain, and increased fire risks likely." CA now has 87% of its area in a severe drought category with 35% in an 5

extreme drought category. The current U.S. Drought Monitor places Ventura County, as of February 2022, as the 3rd driest year to date over the past 128 years.98.75% of Ventura County considered severe drought status. In addition, groundwater reserves are decreasing and groundwater quality shows increasing nitrates and TDS. How is it possible to say we have enough water for 2000 more people and all the landscaping detailed in the Specific Plan I? All 58 CA counties are not under a drought emergency proclamation. DWR will reduce State Water Project allocations to 5% of requested supplies for 2022. Statewide reservoir levels are decreasing. Some reservoirs are at a mere 35% of capacity. Governor Newsom has asked every user to voluntarily reduce water consumption by 15%. 5

6. **Electrical Capacity**: Reduced water levels in reservoirs, along with Colorado River volume reduction, will place increasing strains on the electrical grid. When I review the public safety shutoffs we've had in the area over the last few years, it makes me very nervous about future cut backs. Should all homes be required to install solar panels and battery walls to provide for themselves when increasing population size strains the system even more? Analyses must be flawed to say "no problem providing electrical service". 6

I have limited my discussion to the DEIR since I understand that is the objective. Thank you for including my concerns. Please keep me on the list of those wanting to be informed of further actions on this project. 7

Doris Miller
6395 Gabbert Road
Moorpark, CA 93021
(805)529-3388

Letter I-Miller-2 Doris Miller

Response to Comment I-Miller-2-1

This comment cites several 'deficiencies' in the Draft EIR but does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Miller-2-2

The comment raises concerns regarding wildfire hazards and the lack of an 'adequate evacuation route', but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record:

The Ventura County Fire Department (VCFD) has thoroughly reviewed the Draft EIR, particularly Section 3.8, Hazards and Hazardous Materials, Section 3.13, Public Services, and Section 3.18, Wildfire, including their related appendices. The VCFD also tendered a 6-page memorandum which includes the VCFD's conditions for approval for the proposed project (refer to Comment **A-VCFD-3**, included above).

In addition, the following information is included on page 3.13-6, in Section 3.13, Public Services:

> ***Anticipated Frequency and Nature of Emergency Occurrence (Special Fire Protection Problems).*** The frequency and nature of future emergency calls is difficult to predict. No uses allowed in the Specific Plan are unusual or have the potential to generate an unusual number or type of calls for service. However, the Specific Plan site is located in an area designated as a "Hazardous Fire Area." Construction would, therefore, be required to comply with all applicable building and fire code requirements. These requirements may include items such as types of roofing materials, building construction, brush clearance, fire hydrant flows, hydrant spacing, access and design, and other hazard reduction programs, as set forth by VCFD. With the implementation of standard conditions and requirements as outlined below, potential fire hazard impacts would be reduced to less than significant levels. Refer also to **Section 3.18, Wildfire,** in this EIR.

The VCFD has not disputed these statements.

Response to Comment I-Miller-2-3

This comment cites concerns related to 'Climate Change,' but does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record:

The Draft EIR provides a robust discussion and analysis of the potential for the Hitch Ranch Specific Plan to impact greenhouse gas emissions and climate change. Please refer to **Section 3.7, Greenhouse Gas Emissions**.

Response to Comment I-Miller-2-4

This comment cites concerns related to train derailments and 'aircraft incidents,' but does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Further, the likelihood of this to occur is speculative; per *CEQA Guidelines* Section 15145 an EIR need not engage in "sheer speculation" as to future environmental consequences. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Miller-2-5

The comment raises concerns regarding water availability, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record:

Section 3.17, Utilities, provides a discussion regarding the availability of potable and reclaimed water and Appendix 3.17, Utilities, includes a Water Supply Assessment.

Response to Comment I-Miller-2-6

The comment raises concerns regarding electrical capacity and strains on the electrical grid, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is provided for the record:

Page 2.0-18 states that:

> In accordance with Section 150.1(b)14 of the 2019 Building Energy Efficiency Standards, all new residential uses of three stories or less would install solar photovoltaic (PV) panels that generate an amount of electricity equal to their expected electricity usage. In addition, although not required by Title 24, the Project would include a rooftop solar system sized at approximately 112 kilowatts for the proposed four-story building that would accommodate the electricity needs of the approximately 135 affordable apartment units.

Further, as discussed on page 3.7-38 o Section 3.7, Greenhouse Gas Emissions:

> As shown in **Table 3.7-5**, the Plan would achieve GHG reductions to reach less-than-significant levels (represented by equal to or less than 2.10 per capita $MTCO_2e$ per resident per year by 2030). The Plan would result in 2.03 per capita $MTCO_2e$ per resident per year through 2030. The Plan's conformance within this threshold is primarily due to the Plan's requirement to comply with the 2019 Building Energy Efficiency Standards and 2019 CALGreen, requiring 100 percent of electricity usage for the proposed residential uses to be supplied by solar PV panels, a 20 percent reduction in indoor water use, and the use of water-efficient irrigation systems. As such, the Plan would also be in line with the state's 2030 and 2045 targets per SB 32 and EO B-55-8 respectively. Therefore, operational and total (construction plus operational) GHG emissions from buildout of the Plan would be less than significant, and no mitigation is required.

Response to Comment I-Miller-2-7

This comment is conclusory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the

comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

I-Miller-3

From: D Miller <dorisronm@gmail.com>
Sent: Tuesday, April 05, 2022 2:24 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Specific plan I

So sorry. I hate spell check. It never catches words that are used incorrectly. In the section on water availability in the letter I emailed yesterday, I mistakenly said "all 58 counties are not under an emergency proclamation". The 'not' should be changed to a now. Totally different meaning. I normally proof read better but the 5 o'clock deadline was looming.
Doris Miller

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Letter I-Miller-3 Doris Miller

Response to Comment I-Miller-3-1

This comment includes some corrections to an earlier comment letter; the corrections noted have been incorporated in the earlier comments. As the comment does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

I-Moffat-Ducharme-1

From: Patricia Moffat-Ducharme <patricia.ducharme@pacbell.net>
Sent: Monday, March 14, 2022 10:21 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Proposed Hitch Development

I am concerned about the proposed Hitch development. I understand the need for housing and I'm not anti development, but specifically this parcel has serious transportation access issues. The number of houses and the dumping of traffic onto Gabbert and Walnut Canyon as those 2 roads are currently configured are a disaster waiting to happen in a fire. Moorpark already has evacuation issues and people have died in the current Gabbert area trying to evacuate a fire and since that time considerable population has been added above High Street all of which is blocked off by narrow 2 lane roads and 3 train crossings. My concern is we could end up the next Paradise if Gabbert, Walnut Canyon and the 3 train crossings aren't widened https://www.streetlightdata.com/limited-emergency-evacuation-routes-map/

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Letter I-Moffat-Ducharme-1 Patricia Moffat-Ducharme

Response to Comment I-Moffat-Ducharme-1-1

The comment presents concerns regarding evacuation during a wildfire emergency but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.**

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

I-Moffat-Ducharme-2

From: Patricia Moffat-Ducharme <patricia.ducharme@pacbell.net>
Sent: Sunday, April 03, 2022 8:49 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Re: Proposed Hitch Development

I want to thank you for the opportunity to speak at the public meeting and while there were many of safety reasons to not allow such an extensive development, it appears neither the developer, the city, the railroad or probably the potential homeowners understand or care of the danger a development of that size could mean in a fire. Moorpark is severely constrained in terms or access and egress. The railroad tracks and crossing are narrow (one lane each way) and can't be widened without the railroad's approval; The 118 and Moorpark road, while bisecting the town can't be widened without state approval. A plan for one thousand residences (two thousand plus cars) all trying to exit onto Moorpark and Gabber roads is a recipe for disaster.

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I understand the desire of the landowner and developer to maximize profits and the city to collect property taxes, but a development of this size is simply too dangerous without significant infrastructure improvement, which the city can neither force the state or railroads to commit to. The plan and the EIR address traffic inside the development, but do not take into account the impact of dumping traffic from North Hill Parkway onto Gabbert a narrow two lane road and the traffic that must stop at the railroad crossing and the 3 away stop after the crossing. Parents on their way to school drop offs will paralyze traffic on Gabbert and Moorpark Road.

There simply has to be a better way to use the property or I would ask the city to obtain the infrastructure improvements prior to putting so many lives in jeopardy.

I-Moffat-Ducharme-2

On Mar 14, 2022, at 10:20 AM, Patricia Moffat-Ducharme <Patricia.Ducharme@pacbell.net> wrote:

I am concerned about the proposed Hitch development. I understand the need for housing and I'm not anti development, but specifically this parcel has serious transportation access issues. The number of houses and the dumping of traffic onto Gabbert and Walnut Canyon as those 2 roads are currently configured are a disaster waiting to happen in a fire. Moorpark already has evacuation issues and people have died in the current Gabbert area trying to evacuate a fire and since that time considerable population has been added above High Street all of which is blocked off by narrow 2 lane roads and 3 train crossings. My concern is we could end up the next Paradise if Gabbert, Walnut Canyon and the 3 train crossings aren't widened https://www.streetlightdata.com/limited-emergency-evacuation-routes-map/

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Letter I-Moffat-Ducharme-2 Patricia Moffat-Ducharme

Response to Comment I-Moffat-Ducharme-2-1

The comment presents concerns regarding evacuation during a wildfire emergency but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.**

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

I-Morser

From: Mike and Laura Morser <bearnbug@gmail.com>
Sent: Wednesday, March 16, 2022 4:25 PM
To: City Council & City Manager <CityCouncil@MoorparkCA.gov>; John Bandek <JBandek@MoorparkCA.gov>; Shanna Farley <SFarley@moorparkca.gov>; Tamar R. Gantt <TGantt@MoorparkCA.gov>; Carlene Saxton <CSaxton@MoorparkCA.gov>; Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Development of land above Poindexter and other area of Moorpark.

Hello. I want to talk about your housing development plan for around Poindexter in Moorpark. Unfortunately I missed Monday night's meeting, and I wanted to express my concern.
I moved to Moorpark in 1986 with my mother after she remarried. My sister went to Chaparral and Moorpark High School, while I went to Moorpark College. I moved away upon marrying in 1993, but have since moved back in 2017. I hated it the first time I lived here. I hated it because I was used to the busyness of the SF Valley; the bussel, my friends, the restaurants, the proximity to LA, etc. Do you know why I moved back here? I moved back here to have my daughter go to a great high school. I moved back here to NOT have the bussel or the proximity of LA! I moved back here because it's really so lovely, beautiful, nice air quality, and relatively less crowded. I understand improvements and staying relative. You don't want it to be Akhiok Alaska, I get it. However when you look at development and urban growth in a city, shouldn't you look at supporting the infrastructure to absorb it. The Truck traffic alone on LA Ave is usually a disaster from 8am-7pm. Tierra Rejada and Spring Rd turn into expressways from 3-7pm. The traffic is becoming a nightmare! Have you been to the intersection of Tierra Rejada and LA at 3:30pm lately. BUMPER TO BUMPER trying to go toward Camarillo! What is going to happen when you build those new houses, condos, and or apartments? More people, more traffic, more more more. STOP! You don't need to build new homes here. Who told you should? We like our Moorpark the way it is! If you want to improve something, fix the potholes on LA Ave going East between Tierra Rejada and Spring. Or redesign the electric grids so the power doesn't have to be shut off all the time. Come on elected officials! Say it with me! "No more new homes in Moorpark!"

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Thank you,
Laura Morser

Letter I-Morser Laura Morser

Response to Comment I-Morser-1

The comment provides some introductory remarks, raises concerns regarding traffic and wildfire evacuation, and expresses opposition to the proposed project, but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.**

Regarding impacts to aesthetics and visual quality, please refer to Section 3.1, Aesthetics.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

I-Noel-1

From: Douglas Spondello
Sent: Monday, April 04, 2022 10:46 AM
To: 'Sharon Noel' <4sharonnoel@gmail.com>
Subject: RE: Citizen Comments

Good Morning Sharon,
First and foremost thank you for the great meeting on Thursday. The GPAC really engaged with the policy recommendations, and I feel we have a better product as a result.

Previous written comments from the EIR scoping period are included in the DEIR Appendix C (pdf page 62 of 6,199) linked here: https://www.moorparkca.gov/DocumentCenter/View/12892/Hitch-Ranch-Appendices-DEIR?bidId= Please note that this document is very large and takes a long time to load. The Appendix also include
Comments provided by public speakers at previous meetings are included on the project site here: Hitch Ranch Specific Plan | Moorpark, CA - Official Website (moorparkca.gov)
Comments made during the current DEIR review period and our responses will be published with the Final EIR later this month/early next month.

Wildfire is analyzed in Section 3.18 of the DEIR based on the technical review included in the 2021 Hitch Ranch Fire Protection Plan which is Appendix 3.18 within the larger Appendix document linked above.

I hope that helps but welcome questions/input.
Thank you,
Doug

I-Noel-1

From: Sharon Noel <4sharonnoel@gmail.com>
Sent: Friday, April 01, 2022 3:46 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Citizen Comments

Hello Douglas,

Can you please tell me where prior citizen statements, specifically concerning wildfire and evacuation concerns related to this project can be viewed? Additionally, where will the current comments, (from February 17, to April 4 be viewable in their documentation? In the draft EIR there is a section containing the concerns known to the lead agency. Yet the agency didn't make mention of wildfire.

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Thanks
Sharon Noel

Letter I-Noel-1 Sharon Noel

Response to Comment I-Noel-1-1

The comment raises concerns that public scoping comments were not addressed in the DEIR but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please note that City of Moorpark Deputy Community Development Director Douglas Spondello provided the requested information to the commenter via email.

I-Noel-2

From: Sharon Noel <4sharonnoel@gmail.com>
Sent: Monday, April 04, 2022 10:14 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Cc: Troy Brown <TBrown@MoorparkCA.gov>; Janice S. Parvin <JParvin@MoorparkCA.gov>
Subject: Hitch Ranch Draft E.I.R.

Good Afternoon Mr. Spondello and the Lead Agency,

The work that has gone into this E.I.R. is impressive. Also, I want to acknowledge Mr. Spondello's politeness and willingness to be helpful on pertinent matters. However, there are some conditions that do exist that have ramifications that aren't being adequately addressed by the mitigations on this project. 1

First, on page 19, 1.3.2, titled Areas of Concern Known To The Lead Agency. This list consists of specific matters that were brought up during the scoping process by citizens and attending agencies, as opposed to the standard checklist covered by CEQA. The fact that the project lies within the States identified Very High Fire Hazard Severity Zone, should be an area of concern, that I must assume you, and the Lead Agency, know about. However for some unknown reason, this fact, and the MANY comments of the citizens during the scoping process, on the matter of wildfire and evacuation, have gone unmentioned in the lists summary. Apparently, they don't concern the Lead Agency. It is of concern to the residents of the surrounding neighborhoods from the project, and likely would concern the future residents of the project. Because no matter how much high tech information we have regarding the prediction of the movement of a fire, if it's heading our way, we will evacuate. Since the fires in the area of great concern (to some), historically move from east 2

to west, as such, people have evacuated onto Gabbert Road. Gabbert Road terminates a short distance to the north. To try to move away from the path of the fire, people move south-west and cross the constriction at the train crossing. Page 134 has a picture of the train crossing that I'm referring to. A dangerous situation in the past, as many residents did attest to during the scoping process. Consider the addition of 2,492 people. A tad disconcerting to say the least! If they get across the tracks, and across Poindexter Ave, in the next block they approach L.A. Ave./118 as they move away from the direction of the fire. This intersection is identified as one of the two locations in the city that operates below standards even on a good day. Picture the sudden addition of a couple thousand cars. The EIR makes reference to the addition of evacuation exit opportunities in the project, however they are either on the east, which is the direction that the fire comes from, due to Santa Ana Winds, (not a help),or the other two from the western terminal of North Hills Parkway, or the new High Street, both of which lead to the location I was just describing. 2

The Lead Agency may not consider it to be an area of concern however Wildfire is one of the standard items on the CEQA checklist. One mitigation brought forth addresses it by saying that since there isn't an evacuation plan in place, no plan will be impaired by the project. It's true, as of yet there is no official evacuation plan. This won't stop people from needing to go somewhere to get away from the oncoming fire. This will be an impact of the project due to the population increase. Albeit an indirect impact, it still deserves (and requires) addressing.

Regarding Cumulative Impacts 3.0.3.2.. North Hills Parkway has been adopted in our current General Plan as a Six-Lane Arterial. The project shows it as a Four-Lane Arterial. Wouldn't it be required to disclose the potential of it becoming Six-Lanes, since it is in the current General Plan? 3

Regarding Aethstetics 3.1 The Land Use Element Goal 1, Page 139. Preserve and enhance the unique aesthetic and visual qualities of Moorpark. Policy 1.1 Protect the scenic viewshed both to and from Moorpark. To this I say that Hitch Ranch is the only area left, to and from Moorpark, that still has its rural and unique qualities of Moorpark. It can be seen from the trains all day long. It deserves to be protected, in reality, not just goals and policies. As the EIR states, the grading, or one could say, degradation of the hills and the landscape will go on for several years. Additionally, both schools nearby will deal with air pollution and noise pollution from the construction for years. The renderings on 146-151 show the ultimate ruination to follow. The view from the train won't show anyone anything "with special Moorpark appeal". Just another developers pocketful of cash. 4

Regarding Biological Resources: The list of Flora and Fauna that deserves protection, either legally or ideally, is staggering. Can the mitigation tasks actually perform efficiently enough to provide protection? Doubtful in my opinion. Looks good on paper. 5

Regarding Growth Management: The project does induce growth. Most of us who have enjoyed life as we know it, would be moving out, due to the effects of this development. After the city tells us not to let the gate hit us on our way out, these large properties will be rezoned into the same thing as the development. 6

Please keep me informed as to the next meeting. Also, I'd like to know who in the Lead Agency, will have the responsibility of addressing, or at least reading this letter? Where will I be able to locate 7

it, once it has been filed?

Thank You
Sharon Noel

Letter I-Noel-2 Sharon Noel

Response to Comment I-Noel-2-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Noel-2-2

The comment raises the concern that wildfire was not included as an 'Area of Concern Known to the Lead Agency,' but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is included for the record:

While wildfire was not originally included on the listing of 'Areas of Concern Known to the Lead Agency' beginning on page 1.0-11, wildfire hazards and risks were analyzed in three sections of the Draft EIR, Section 3.8, Hazards and Hazardous Materials, Section 3.13, Public Services, and Section 3.18, Wildfire.

The Final EIR will be revised to include wildfire on the listing of 'Area of Concern Known to the Lead Agency'. Please refer to Section 3.0, Revisions to the Draft EIR, Section 1.0, Executive Summary.

Response to Comment I-Noel-2-3

North Hill Parkway is no longer envisioned as a six-lane arterial roadway. As such, approval of the proposed project would include a General Plan Amendment, including an amendment to the Circulation Element:

> **Circulation Element**: Amend to include the extension of High Street to Gabbert Road. Under the current General Plan Circulation Element High Street terminates east of Hitch Ranch at Moorpark Avenue. The High Street roadway presently extends westerly approximately 700 feet beyond Moorpark Avenue to provide access to the United States Post Office. The additional extension to connect to the Hitch Ranch property will provide a secondary access point for the Post Office and improve east/ west circulation within the portion of the City north of the Union Pacific Railroad

tracks. High Street will be built as a two-lane collector roadway with traffic calming roundabouts within the Specific Plan. The Circulation Element is also to be amended to reduce North Hills Parkway from a six-lane arterial roadway to a four-lane arterial roadway through the Hitch Ranch project, along with the deletion of a traffic signal at North Hills Parkway and Gabbert Road. The current General Plan Circulation Element also shows a conceptual alignment for Casey Road that would not be feasible due to the hilly landforms of the Hitch Ranch property. The current Circulation Element Casey Road conceptual alignment also terminates on the west end at an impractical location too near to the intersection with the currently-designated six-lane and signalized North Hills Parkway. With the proposed Circulation Element Amendment both Street "A" and Meridian Hills Drive will be added as Local Collector roads originating at Walnut Canyon Road on the north and terminating at High Street extension on the south. Casey Road will terminate on the west at Street "A". These General Plan Circulation Element Amendments will create additional routes of vehicle circulation through interconnection that was not anticipated at the time that the 1992 General Plan Circulation Element was last updated.

Response to Comment I-Noel-2-4

The comment raises concerns regarding aesthetic impacts but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Bruckner-1-1.**

Response to Comment I-Noel-2-5

The comment expresses an opinion that the mitigation measures included in the EIR to protect and preserve biological resources are not sufficient, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Noel-2-6

The comment expresses an opinion regarding growth management, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of

the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Noel-2-7

Responses to all comments received during the public comment period on the Draft EIR, including those from the commenter, will be made available for review as part of the Final EIR document at least 10 days prior to certification of the Final EIR.

I-Osipian-1

From: Armen <housephiliac@gmail.com>
Sent: Monday, March 14, 2022 5:19 PM
To: Planning <planning@MoorparkCA.gov>
Subject: Development Project

Hello,

Our household would like to add our voices to the support for the proposed housing development north of Poindexter.

We will certainly hear resounding calls to block development from fellow residents and we have to make sure infrastructure work will be done to alleviate their concerns but I really hope they don't succeed in cutting the project or reducing the scope.

1

Housing supply issue is devastating.

Thanks,
Armen Osipian

Letter I-Osipian-1 Armen Osipian

Response to Comment I-Osipian-1-1

The comment provides some introductory remarks and expresses support for the proposed project but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

I-Osipian-2

From: Armen <housephiliac@gmail.com>
Sent: Wednesday, March 16, 2022 3:50 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Ranch project

Hello,

Our household would like to add our voices to the support for the proposed housing development north of Poindexter.

The infrastructure adjustments do have to be made though. People are making good points regarding roads and water supply. But the housing supply issue is devastating so maybe there's a compromise solution.

1

Thanks,
Armen Osipian

Letter I-Osipian-2 Armen Osipian

Response to Comment I-Osipian-2-1

The comment provides some introductory remarks and expresses support for the proposed project but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

Regarding water supply, please refer to Section 3.17, Utilities and Service Systems, beginning on page 3.18-4.

I-Perreyclear

From: Perreyclear <perreyclearhouse@yahoo.com>
Sent: Sunday, March 13, 2022 12:33 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Ranch - Traffic Analysis

The EIR traffic analysis stated on page 28, 'there would be a reduction in the level of service at (3) intersections", within Moorpark. This is because the level of service is no longer an environmental impact consideration under CEQA ?

Moorpark is not being fairly represented under CEQA to protect its city residents from the already over burdened traffic on Los Angeles Street, less the future addition of traffic impacting it. Since CEQA no longer considers 'level of service' in its analysis it is contributing to the reduction of the future environmental quality of life in Moorpark. 1

Please stand and protect the environmental quality of life as it relates to additional traffic and the reduction in the level of service at the (3) intersections on Los Angeles Street for all city residents by voting down the Hitch Ranch project.

Wes Perreyclear
15033 Marquette Street, Moorpark
perreyclearHouse@yahoo.com

Letter I-Perreyclear Wes Perreyclear

Response to Comment I-Perreyclear-1

The comment provides some introductory remarks, raises concerns regarding traffic, and expresses opposition to the proposed project, but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding impacts related to traffic and Level of Service, please refer to Section 3.10, Land Use.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

I-Sierra

From: Chris Sierra [mpchriss@hotmail.com]
Sent: Monday, March 7, 2022 2:35 PM
To: Douglas Spondello
Cc: Jesse Sierra
Subject: Hitch Ranch Development

Good Afternoon, Douglas,

I am a 35-year resident located off of Poindexter Ave., and I have a few questions/concerns regarding the Hitch Ranch Development proposal. I have reviewed the plan on the Moorpark Website. Within the plan, I do not see any plan to build more main roads and infrastructure to support the additional 755 units. I see one road (North Hills Parkway) that will potentially connect between Gabbert Road and Moorpark Avenue, which along with Poindexter Avenue, these are the only three main roads to support the existing residents that live around these three roads. If you are a Moorpark Resident, residents are aware of the existing heavy traffic on Poindexter Avenue and Moorpark Avenue during morning peak hours Monday through Friday due to Chapparral Middle School and commuters leaving Moorpark for work within this area. This is the same for the afternoon peak hours as well.

My questions are:

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1. Is the Moorpark Community Development Office aware of the logistical, infrastructure nightmare that this Development will bring to the Moorpark Downtown area?
2. Is there a road infrastructure plan in place to build more roads outside of this development besides North Hills Parkway?
3. Are you a resident of Moorpark, and if so, how do you feel about the impact this development might have on the three main roads listed above and the Downtown surrounding areas?

Thank you for your time, a response would be greatly appreciated.

Best Regards,
Christopher Sierra

Letter I-Sierra Christopher Sierra

Response to Comment I-Sierra-1

The comment provides some introductory remarks and expresses concerns regarding the traffic impacts and infrastructure development for the proposed project but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding impacts related to traffic and Level of Service, please refer to Section 3.10, Land Use.

Regarding impacts related to transportation and traffic, please refer to Section 3.15, Transportation.

Regarding impacts related to public infrastructure, please refer to Section 3.17, Utilities and Service Systems.

I-Stratton

From: therisingphoenix@sbcglobal.net <therisingphoenix@sbcglobal.net>
Sent: Sunday, April 03, 2022 11:36 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Ranch EIR: Concerning Hazardous Materials

MR. Spondello,
My name Chad Stratton. As a 50 year resident of Moorpark / Gabbert Canyon,
I am concerned with the inevitable exposure to radioactive Isotopes, carried by 'east wind' events, during the grading process of the 'Hitch Ranch' project.
The EIR discusses RADON but not the actual minerals below the surface. The minerals, if ingested, will lead to serious health issues.
I have discovered ore samples within the scope of the project that have raised my concerns. I have included media to substantiate my claim.
The design of this project is fantastic. I studied the design…Unfortunately it puts this 100 year old community in peril.

1

The video added shows a radiological survey of the ore samples, the high value is 10 clicks per second.
(see translation in attachment: o**resample_rad_lvel_Hitch_Rach.png)**

There is so much more I wish to add. I will be in contact to arrange a meeting so we can discuss this

in further detail.

Best Regards,
Chad I. Stratton

1. Disintegrations per second | Radiology Reference Article | Radiopaedia.org
2. Disintegrations per Second to Picocurie (unitsconverters.com)
3. report.pdf (usgs.gov)

Letter I-Stratton Chad Stratton

Response to Comment I-Stratton-1

The commenter expresses concern regarding potential off-property migration of dust during site grading and construction, particularly dust derived from local geologic strata that may contain radioactive isotopes.

Section 3.2, Air Quality, of the DEIR evaluates the impact the project, including its construction phase, on ambient air quality, including emissions from the combustion of motor fuels and the generation of dust. Subsection 3.2.1.3 Local Regulations describes the authority and responsibility of local government with respect air quality, specifically in this case to changes in air quality associated with construction and site development. Reference to Ventura County Air Pollution Control District (APCD) Rule 55 (Fugitive Dust) is made in this section on page 3.2-8 of the DEIR.

Rule 55 establishes standards for dust control during ground disturbance, a methodology for measurement, and protocol for reporting and upset control. The Rule 55 standard is rigorous, and adherence during site preparation, grading and construction will mitigate the concern articulated in the referenced comment.

The measures in this section are reiterated here for convenience:

3.2.6.1 VCAPCD Construction Control Measures

CM AQ-1: The following control measures provided in the VCAPCD Air Quality Assessment Guidelines to minimize the generation of fugitive dust (PM10 and PM2.5), ROC, and NO_x during construction activities shall be implemented during construction of the Proposed Project:

- The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust.
- Pre-grading/excavation activities shall include watering the areas to be graded or excavated before grading or excavation operations commences. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.
- Fugitive dust produced during grading excavation and construction activities shall be controlled by the following activities:
- All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic

watering, application of environmentally safe soil stabilization material, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible.

- Graded and/or excavated inactive areas of the construction site shall be monitored at least weekly for dust stabilization. Soil stabilization methods, such as water and roll-compaction, and environmentally safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally safe dust suppressants to prevent excessive fugitive dust.
- Signs limiting traffic to 15 miles per hour or less shall be posted on site.
- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off site or on site. The site superintendent/supervisor shall use discretion in conjunction with the VCAPCD in determining when winds are excessive.
- Adjacent streets and roads shall be swept at least once per day, preferably at the end of the day if visible soil material is carried over to adjacent streets and roads.
- Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations.
- During the construction phase, signs shall be posted on site and viewable to the public with the VCAPCD Complaints Hotline phone number 805-303-3700.

Timing/Implementation: During construction activities

Enforcement/Monitoring: City of Moorpark Community Development and Public Works Departments

Additionally, while the DEIR does not enumerate all the negative health consequences potentially associated with the uncontrolled generation of dust during grading, it does include a section that speaks specifically to the potential for transmission of Valley Fever by dust and the associated need to mitigate. On page 3.2-28, the DEIR states:

> *… the Project is conservatively assumed to have a potentially significant impact with respect to Valley Fever and mitigation is required. **S**ee Construction Mitigation Measure MM AQ-1, Section 3.2.6.2.*

The Valley Fever-specific mitigation described in Section 3.2.6.2 referenced above builds on the measures documented in Section 3.2.6.1 (above). Taken together, the DEIR measures for compliance with the VCAQMD Rule 55 and the exposure-specific mitigation protocol for transmission of Valley Fever by uncontrolled emission of dust establish measures that should adequately control for any dust-borne condition of potential concern.

Further, project-specific construction management plans shall be prepared for each phase of site preparation, grading and development. These plans must include, but not necessarily be limited to, a description of dust monitoring equipment, station placement, monitoring frequency, agency oversight/reporting and stop-work protocol.

I-Tamayo

From: Salvador Tamayo <tc.salvador@yahoo.com>
Sent: Monday, April 04, 2022 3:46 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Cc: City Manager <CityManager@MoorparkCA.gov>; Troy Brown <TBrown@MoorparkCA.gov>
Subject: Salvador Tamayo - Public Comment regarding Hitch Ranch Specific Plan

I plan to live in Moorpark many more decades. Do you? Do they?
If I did not see myself living in Moorpark in the future, I would not be expressing my opinion.

You should base your approval or denial of the Hitch Ranch project based on the opinion of those who are young and plan to live their lives in Moorpark. The people who will have to live with a decision you made. Smart move would be build what's already approved and 5 years from now reassess if the Hitch Ranch development is needed.

Hello my name is Salvador Tamayo. I was born in Simi Hospital and have lived in Moorpark my entire life, 24 years and counting. My life is deeply rooted in Moorpark. My dad moved to Moorpark back in early 70s. He's been here ever since. Being of Hispanic descent my family is enormous. I have family scattered near and far all throughout Moorpark. From Villa Del Arroyo, Campus Park, all of downtown, Peach Hill, near glenwood park, and home acres. I know every household in downtown Moorpark, from Spring Rd to Chaparral middle school and they know my family. None of these families have any plans to leave moorpark.

1

Building hitch ranch will not solve the overcrowding in Moorpark. There are enough approved projects as is. Build those approved projects then reassess. People have to overcrowd in order to survive. If families overcrowd because they can not afford a single dwelling rent, how do you expect them to be able to afford a new development where single family homes will easily

be in the 700k plus range.

Hitch Ranch homes will be expensive and majority of people in Moorpark who would like to buy in Moorpark, won't be able to. Moorparkians will be priced out by transplants.

There is no public need for this housing development in this specific area.

The Moorpark community wants preservation of landscape, therefore the Chamber of Commerce has to push forth that.
Historic preservation of Moorpark. People don't know and won't get to know the mountain range, hills of moorpark. The current landscape is what people have fallen in love with. It's a scenic drive on the way home. The landscape does not move, it is not rushed, it stays constant, consistent.

Why not push to develop in these areas that are already surrounded by housing?

- 1055 Marine View Ln, Moorpark, CA 93021 : Instead of building 21 homes, push to build 24+ homes.
- Beltramo Ranch 11930 W Los Angeles Ave, Moorpark, CA 93021 : Provides 47 single family residences. One major concern for this development is entering and existing from a major highway. Semi trucks always drive on the right lane that runs directly along this development entrance/exit.
- Green Island Villas is already approved for 63 units.
- Everett State Terraces is a good use of empty land, it provides no use of landscape. Its development would fit in with the landscape around it. Providing 60 units.
- High Street Depot is approved for 79 units.

Totaling 270 residences ranging from detached residences to apartments. Plus the 128 ADUs that the city expects will be built between 2021-2029.
Out of these 270 residences, how many will be available for affordable housing?

1

Why not build the housing named above and revisit building Hitch Ranch 5+ years from now? This so called "Current demand for more housing" does not mean that will be same demand a decade or more from now. Lives change everyday, every year. Families come and go.

What are the consequences for not meeting the state's RHNA for Moorpark?
Let's say all the approved developments are built plus Hitch Ranch and Pacific Communities. Going forward from the year 2029, where does the city plan to build in order to meet then Moorpark's Regional Housing Needs Allocation? Has the Chamber of Commerce asked themselves what to do for meeting RHNA for years 2029-2038?

How does Hitch Ranch development go around the SOAR initiative?

What about developing more of the highlands?
For example this land located alongside Spring Rd & north of Charles St.
gps coordinates that can be copy & pasted into google maps: 34.290996, -118.871694

I say build in the outskirts of Moorpark before you develop downtown Moorpark.

What new companies have been brought to Moorpark? Amazon? The majority of Amazon workers will not be able to afford new housing in Moorpark. Furthermore causing overcrowding in single family dwellings.

I-Tamayo

Questions to ask yourself:

What is the penalty by not meeting the states demand for housing over the next 9 years?

What is the rush with approving so many projects so early into the RHNA 2021-2029? We've started the year 2022 only a few months ago.

Why not look into using existing empty commercial buildings and turning them to accommodate housing?

What guarantee is there that the Hitch Ranch development will not be sold to investment firms, real estate firms? The properties can be sold to investment firms before the first hole is dug and in turn they leverage to rent the properties at high rents or they increase the sale price, pushing out local homebuyers.

1

What guarantee is there that the properties will be affordable?
Why not request more affordable housing to be allocated out of the total sum of units?

If you think that building hitch ranch will be good for the updated high street, then you are wrong. Moorpark has thousands of people that will go to high street. No need to build 755+ homes thinking it will be good for high street. Just go ahead and develop high street first. See how High Street Depot is received then plan around that.

Other Concerns: fire evacuation, increased water usage of already "high risk" water sources, increased pollution from more homes, can Moorpark K-12 handle hundreds of new enrollees?,

Hopefully you took the time to read all of this.

If you need to get ahold of me,
My phone number is 805-630-2977
My email is tc.salvador@yahoo.com

Best regards,
Salvador Tamayo

Preserve the Moorpark we have all gotten to know and love.

Letter I-Tamayo Salvador Tamayo

Response to Comment I-Tamayo-1

The comment presents some introductory information, and expresses opinions regarding regional growth, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is included for the record:

The Regional Housing Needs Assessment (RHNA) is a requirement of State housing law and is a process that determines projected and existing housing need for all jurisdictions (city or unincorporated county) in California. The process to determine a RHNA allocation is conducted by a council of governments, such as SCAG, every eight (8) years. Every jurisdiction must plan for its RHNA allocation in its housing element of its General Plan by ensuring there is enough sites and zoning to accommodate their RHNA allocation.

Consequences for not meeting RHNA can include the shortening of the time-frame that the City would have to adopt a new housing element to every four years instead of eight; the requirement to find accommodation for 'unmet need' sites from the previous cycle in the first year of the next housing element, in addition to their newest assigned RHNA allocation; ineligibility for certain funding opportunities; and legal action, including legal challenges from the California Department of Housing and Community Development (HCD).

As discussed on page 5.0-4 of Section 5.0. Other CEQA Considerations, Save Open and Agricultural Resources (SOAR) is a set of laws adopted by the local governments of Ventura County in order to control urban sprawl in the county. In Ventura County's unincorporated lands, SOAR requires the County Board of Supervisors to receive approval from voters all over the county before any up-zoning of the unincorporated lands currently designated for agricultural, open space, or rural land uses can occur. SOAR establishes city-urban restriction boundaries (CURBs) around the perimeters of each incorporated city in Ventura County. If City leadership seeks to expand their CURB beyond its existing limits, they must have the approval of a majority of voters in the city before the expansion can occur. Each community in Ventura County voted in 2016 to extend their participation in SOAR past the original initiative's expiration date of 2020. In Moorpark, SOAR was re-extended by Measure E to continue until 2050. As shown in **Figure 5.0-1, SOAR-CURB Boundary within Moorpark**, the Project site is well within the SOAR-CURB boundary, and thus would not induce/cause growth outside of an area intended for urban development.

Regarding air quality impacts, please refer to Section 3.2, Air Quality.

Regarding water supply, please refer to Section 3.17, Utilities and Service Systems, beginning on page 3.18-4.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

Regarding impacts to local schools please refer to Section 3.13, Public Services, Schools, beginning on page 3.13-14.

I-Wagenbach-1

From: Nancy Wagenbach <ntwagen@sbcglobal.net>
Sent: Monday, April 04, 2022 8:28 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Comments Concerning Hitch Ranch

Mr. Spondello,
The attached file contains my comments and concerns pertaining to the DEIR on the proposed Hitch Ranch development.
Nancy Wagenbach

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Letter I-Wagenbach-1 Nancy Wagenbach

Response to Comment I-Wagenbach-1-1

This comment is introductory in nature and does not state a specific concern or question regarding the sufficiency of the Draft EIR in identifying and analyzing the environmental impacts of the project and ways to reduce or avoid these impacts. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

I-Wagenbach-2

Comments On DEIR-Proposed Hitch Ranch Development

The following are concerns I have concerning the proposed Hitch Ranch development:

1. Air Quality – 755 housing units – associated construction and emissions from future vehicles. How can that not have a major impact in a negative way on the air quality? There is no vehicular traffic currently associated with the proposed site. 1
2. Fugitive Dust – Due to the apparent increase in high wind days, keeping dust generation and spread under control during construction is a concern. 2
3. Local Vicinity Emissions – Labeling an intersection EOS E or F doesn't convey the fact that these intersections may take 3 or 4 light cycles – or possibly more depending on the circumstances- to get through the intersection. The intersections of Walnut Cyn/High St. and Moorpark Ave/Poindexter are already highly impacted intersections due to the short distance between them which is further impacted by the UP rail line bisecting the roadway and the constant stream of sand and gravel trucks that use this roadway to get to Los Angeles Ave to the south. The builder assumes elementary students will attend Walnut Canyon. This is not a valid assumption since all elementary schools are magnet schools and each has a different focus. In Moorpark, it seems that most children are driven to school, so there will be a very significant increase in traffic at all the roadways that exit this proposed development as children are driven to Walnut Canyon on Casey, Chaparral Middle school on Poindexter or Moorpark High on Tierra Rejada. The traffic on Poindexter already comes to a standstill at the start and end of the school day as vehicles wait in traffic lanes to enter the school grounds. Vehicles trying to get through can be delayed 5 minutes or more because the road is not wide enough to get around the waiting traffic. Gabbert is the most expedient way to get to Tierra Rejada to get to the high school. There is already high usage of this corridor getting students to and from the school. 3
4. Draft Specific Plan – The proposed development exits onto roads that are all one lane in each direction without the possibility of widening. 755 housing units has the potential of 3 vehicles (or more) each which is an increase of 2,265. With only 2 trips per day, that's 4,530 more vehicles through 3 initial intersections. 4
5. Roundabouts – will there be adequate street signage and night time lighting? Roundabouts are still an unexpected traffic layout for most people. 5
6. With the density increase in population, any type of mass evacuation could result in complete grid lock. Even without this housing development, there have been traffic situations that have completely grid locked the Walnut Cyn/High St., Moorpark Ave/Poindexter and Moorpark Ave/ Los Angeles intersections. When Moorpark Ave backs up from Los Angeles Ave to High St, no traffic can move until the Los Angeles light turns green. If the Southbound light at Walnut Cyn/ High St turns green before the westbound light turns green, the roadway fills again and the westbound as well as the east bound traffic are unable to turn onto Moorpark Ave. The westbound traffic must turn right onto Moorpark Ave and right onto Charles St to back track to Spring Rd. The eastbound traffic must illegally turn around and exit through the library and civic center parking lots and cross Moorpark Ave through stopped traffic to Charles St to back track to Spring Rd. 6

I-Wagenbach-2

7. Where does the North Hills Pkwy connect past Gabbert, or is it only proposed to extend at some time in the future, so all traffic will dump onto Gabbert which again becomes a 2 lane road? 7
8. Landscaping – Plants were listed for common and housing areas with references to drip irrigation. There was one mention of turf. Considering California is facing the reality of less water and higher demand, might this be a good time to eliminate turf wherever possible? A front yard of turf is now a luxury that our rainfall can't defend. 8

Thank you for your consideration.

Sincerely,

Nancy Wagenbach

Letter I-Wagenbach-2 Nancy Wagenbach

Response to Comment I-Wagenbach-2-1

The comment expresses concerns regarding traffic impacts related to air quality but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is included for the record:

Regarding air quality impacts, please refer to Section 3.2, Air Quality, this section includes analysis of both mobile (traffic) and stationary impacts to air quality.

Response to Comment I-Wagenbach-2-2

The comment expresses concerns regarding fugitive dust but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is included for the record:

Potential impacts related to fugitive dust are discussed in Section 3.2, Air Quality.

Please also refer to **Response to Comment I-Stratton-1.**

Response to Comment I-Wagenbach-2-3

The comment expresses concerns regarding traffic delays and schools but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Notwithstanding the above, the following information is included for the record:

Impacts to traffic related to level of service are addressed in Section 3.10, Land Use, and Appendix 3.10.

Regarding impacts to local schools please refer to Section 3.13, Public Services, Schools, beginning on page 3.13-14.

Response to Comment I-Wagenbach-2-4

The comment raises concerns regarding an increase in traffic, but does not provide data or references offering facts, reasonable assumptions based on facts, or expert opinion supported by facts in support of the comments. Pursuant to *CEQA Guidelines* Section 15064, an effect shall not be considered significant in the absence of substantial evidence. Therefore, further response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

For the record, Table 3.10-5 found on page 13 of the updated TIA in Appendix 3.10 of the Draft EIR shows that daily Project Traffic Generation for the proposed project.

Table 3.10-5
Project Traffic Generation (Weekday AM and PM Hours)

	Daily	AM Peak Hour			PM Peak Hour		
Proposed Land Use	**Traffic**	**Total**	**In**	**Out**	**Total**	**In**	**Out**
Single-Family Residences	4,301	316	79	237	423	266	157
Multi-Family Residences	2,401	151	35	116	184	116	68
Public Park	4	0	0	0	1	0	1
Total	6,436	467	114	353	608	382	226

Source: Impact Sciences, 2021

Response to Comment I-Wagenbach-2-5

The comment expresses concerns regarding traffic roundabouts but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

For the record, all intersections within the hitch Ranch Specific Plan area will meet all of the requirements and safety standards of the City of Moorpark City Engineer and the Ventura County Fire Department.

Response to Comment I-Wagenbach-2-6

The comment expresses concerns regarding gridlock during evacuation but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a

response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Response to Comment I-Wagenbach-2-7

The comment expresses concern regarding the termination of North Hills Parkway at Gabbert Road but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

For the record, it is anticipated that additional portions of North Hills Parkway west of Gabbert Road will be completed by a future project.

Response to Comment I-Wagenbach-2-8

The comment expresses concern regarding landscaping but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

For the record, residential lots with landscaped areas will meet the California Model Water Efficient Landscape Ordinance. The majority of the residential lots will include less than 400 square feet of landscaped area. The use of these measures throughout the Project will reduce the water demand as compared to residential units that do not implement water conservation measures. The Hitch Ranch Project will include the use of recycled water for all non-residential landscape irrigation demands, including parks, medians, slopes, and other irrigated areas.

I-Wareham

From: Douglas Spondello
Sent: Monday, April 04, 2022 8:10 AM
To: 'Martin Wareham' <mewareham@yahoo.com>
Cc: Janice S. Parvin <JParvin@MoorparkCA.gov>; Chris Enegren <CEnegren@MoorparkCA.gov>; David Pollock <dpollock@MoorparkCA.gov>; Daniel Groff <DGroff@MoorparkCA.gov>; Antonio Castro <ACastro@MoorparkCA.gov>; Carlene Saxton <CSaxton@MoorparkCA.gov>; Carlene Saxton <CSaxton@MoorparkCA.gov>; Troy Brown <TBrown@MoorparkCA.gov>
Subject: RE: Hitch Ranch Project

Good Morning Dr. and Mrs. Wareham,
Thank you for your comments regarding the Hitch Ranch Specific Plan Draft Environmental Impact Report (EIR). We will respond to your comments in the Final EIR and will include you in notices regarding future public meetings for this project.
Best,
Doug

Doug Spondello, AICP
Deputy Community Development Director
Community Development Department
City of Moorpark | 799 Moorpark Ave. | Moorpark, CA 93021
(805) 517-6251 | dspondello@moorparkca.gov
www.moorparkca.gov

I-Wareham

-----Original Message-----
From: Martin Wareham <mewareham@yahoo.com>
Sent: Sunday, April 03, 2022 9:28 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Cc: Janice S. Parvin <JParvin@MoorparkCA.gov>; Chris Enegren <CEnegren@MoorparkCA.gov>; David Pollock <dpollock@MoorparkCA.gov>; Daniel Groff <DGroff@MoorparkCA.gov>; Antonio Castro <ACastro@MoorparkCA.gov>
Subject: Hitch Ranch Project

Dear Mr Spondello,

As an adjacent neighbor to the Hitch Ranch, we appreciate being included in the early discussions of the Project. We have owned our 3.2 acre property bordering Hitch Ranch since 1984. In that year the property in question was zoned agricultural 40 acres. When we began challenging this development the number of houses proposed was much lower and we have seen the proposed project expanded from around 320 homes to over 1000 when built out with low income housing.

We have experienced several fires during this time—some of them coming through our community necessitating the emergency evacuation of livestock and human lives. Many of us have driven through burning trees on Gabbert just to get to the other side of the railroad tracks.

Our biggest concern about the Hitch Ranch Project is one of safely evacuating during the next major fire. We were able to evacuate during previous fires because the road was clear to the railroad crossing. Adding 1000 homes and two connections between Walnut Canyon and Gabbert Rd but not building additional RR crossings will cause a bottleneck that would potentially trap people and livestock in the canyon with no way out. Multiple lanes on the Parkway and widening part of Gabbert Rd will not facilitate evacuation over the railroad tracks. This will back up the traffic both in the project and our ranches placing livestock and human lives at great risk.

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We understand there will be several outlets for the Ranch but all of these converge on narrow streets and roads that are already busy. Moorpark streets are not conducive for rapid evacuation during fires. The direction of major fires will force residents to take evacuation routes south and west. The 118 highway is 2 lanes just past Gabbert and will have to absorb traffic from Tierra Rejada Rd, Gabbert, and the 118 from the East. The only other outlet will be the 23 Fwy West but previous fires have shut down that exit path in the past.

We request the City of Moorpark carefully consider the risks to its community by building so many homes in the path of inevitable fires without adequate evacuation routes in place. Moorpark has unique hurdles to it's traffic flow but to ignore them could be catastrophic. Before considering any

more building North of the RR tracks think of the people and livestock that already live here. Gabbert Rd is our ONLY choice for an evacuation and with all the livestock it is not something that can be accomplished in one trip.

Sincerely,

Martin and Barbara (Toby) Wareham
11905 Elwin Ln
805-427-2865

Sent from my iPad

Letter I-Wareham Martin and Barbara Wareham

Response to Comment I-Wareham-1

The comment provides some introductory remarks, raises concerns regarding traffic and wildfire evacuation, and expresses opposition to the proposed project, but does not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding project traffic and circulation, as well as cumulative projects that were included in Traffic Impact Analysis (TIA), please refer to Section 3.0, Environmental Impact Introduction, Section 3.15, Transportation and Section 3.10, Land Use, which include full discussions of the City's Circulation Element, as well as project improvements to the multi-modal circulation through the project site.

Regarding the Union Pacific railroad crossing – as discussed on page 3.15-24 of Section 3.15, Transportation, there will be no changes required to the Gabbert Road railroad crossing as the Traffic Impact Analysis (TIA), provided as Appendix 3.10 to the Draft EIR, demonstrates that the build-out of the proposed project along with future traffic increases in traffic volumes do not warrant any improvements at this crossing.

Regarding impacts related to fire protection, please refer to Section 3.13, Public Services, beginning on page 3.13-2.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

2.3 PLANNING COMMISSION HEARING

A special meeting of the City of Moorpark Planning Commission was held on March 14, 2022, in the City of Moorpark Apricot Room. A comment period followed City of Moorpark Planning Manager Douglas Spondello's presentation on the Project. Public comments mainly related concerns regarding potential impacts to aesthetics, infrastructure, traffic, and wildfire evacuation.

Comments from Rene Mayfield

1. Inadequate transportation infrastructure

2. Impacts to State highway and railway crossing

Response to Rene Mayfield

The commenter raised concerns regarding transportation infrastructure, impacts to state highway and the railway crossing, but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Regarding project traffic and circulation, as well as cumulative projects that were included in Traffic Impact Analysis (TIA), please refer to Section 3.0, Environmental Impact Introduction, Section 3.15, Transportation and Section 3.10, Land Use, which include full discussions of the City's Circulation Element, as well as project improvements to the multi-modal circulation through the project site.

Regarding the Union Pacific railroad crossing – as discussed on page 3.15-24 of Section 3.15, Transportation, there will be no changes required to the Gabbert Road railroad crossing as the Traffic Impact Analysis (TIA), provided as Appendix 3.10 to the Draft EIR, demonstrates that the build-out of the proposed project along with future traffic increases in traffic volumes do not warrant any improvements at this crossing.

Comments from Barbara Wareham

1. Wildfire evacuation hazards

Response to Barbara Wareham

The commenter raised concerns regarding wildfire evacuation routes but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.**

Comments from Patricia Ducharme

1. Wildfire evacuation hazards

Response to Patricia Ducharme

The commenter raised concerns regarding wildfire evacuation routes but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.Comments from Gail Bruckner**

1. Wildfire evacuation hazards
2. Traffic infrastructure
3. Aesthetics/Slopes
4. Water Supply
5. Air Quality

Response to Gail Bruckner

The commenter raised concerns regarding wildfire evacuation routes, traffic infrastructure, aesthetics/slopes, water supply, and air quality, but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.**

Regarding impacts to aesthetics and visual quality, please refer to Section 3.1, Aesthetics.

Regarding impacts related to air quality, please refer to Section 3.2, Air Quality.

Regarding impacts related to transportation and traffic, please refer to Section 3.10, Land use and Section 3.15, Transportation.

Regarding water supply, please refer to Section 3.17, Utilities and Service Systems, beginning on page 3.18-4.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

Comments from Sharon Noel

1. Wildfire evacuation hazards

2. Traffic congestion, North Hills Parkway as truck lane

3. Notification of Project and Hearings

4. Equestrian Use conflicts

Response to Sharon Noel

The commenter raised concerns regarding wildfire evacuation routes, traffic congestion, public hearing notifications, and potential conflicts with equestrian land uses, but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.**

Regarding impacts related to transportation and traffic, please refer to Section 3.10, Land use and Section 3.15, Transportation.

Regarding equestrian use conflicts, please refer to Section 3.10, Land Use.

Regarding impacts related to wildfire, please refer to Section 3.18, Wildfire.

Comments from Sharon Schieltz

1. Aesthetics and visual resources impacts

2. Alternatives.

Response to Sharon Schieltz

The commenter raised concerns regarding aesthetics/slopes, and the selection of project alternatives, but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Mikos-2.**

Regarding impacts to aesthetics and visual quality, please refer to Section 3.1, Aesthetics.

Comments from Mark Taillon

1. Notification of Project and Hearings

2. Wildfire evacuation hazards

3. Water Supply

Response to Mark Taillon

The commenter raised concerns regarding public hearing notifications, wildfire evacuation routes, and water supply, but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.**

Regarding water supply, please refer to Section 3.17, Utilities and Service Systems, beginning on page 3.18-4.

Comments from Marisela Morales (via Zoom)

1. Wildfire evacuation hazards

Response to Marisela Morales (via Zoom)

The commenter raised concerns regarding wildfire evacuation routes but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Miller-2-2.**

Comments from Salvador Tamayo (via Zoom)

1. Development Process, overdevelopment

Response to Salvador Tamayo (via Zoom)

The commenter raised concerns regarding regional overdevelopment but did not state a specific concern or question regarding the adequacy of the analysis contained in the Draft EIR. Therefore, a response is not required pursuant to CEQA. However, the comment is acknowledged for the record and will be forwarded to the decision-making bodies for their review and consideration.

Please also refer to **Response to Comment I-Tamayo-1**

2.4 COMMENTS RECEIVED AFTER THE COMMENT PERIOD CLOSED

The following Comments were received by the City after the public Comment Period closed on April 4, 2022, at 5:00 pm. Similar to the concerns raised by other commentors, these comments mainly relate to concerns regarding aesthetics, infrastructure, traffic, and wildfire.

I-Dimberg

FYI received after close

Doug Spondello, AICP
Deputy Community Development Director
Community Development Department
City of Moorpark | 799 Moorpark Ave. | Moorpark, CA 93021
(805) 517-6251 | dspondello@moorparkca.gov
www.moorparkca.gov

From: Erin Dimberg <ecdimberg@gmail.com>
Sent: Wednesday, April 06, 2022 11:03 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: hitch project

I am writing to share my support of the Hitch Ranch project. Moorpark needs more housing options to help increase our population, support vacant business properties and our school district which has declining enrollment. My concern for this and other projects is that I do not see infrastructure and transportation plans accompanying these projects. Current roads do not support those who reside in Moorpark and travel these roads today. The city cannot build these housing projects without addressing traffic.

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Thank you,

--
Erin Dimberg
Mountain Meadows Secretary
Chaparral PTSA Financial Secretary
Moorpark Council PTA Secretary

I-Miller-4

FYI submitted after close of comments

Doug Spondello, AICP
Deputy Community Development Director
Community Development Department
City of Moorpark | 799 Moorpark Ave. | Moorpark, CA 93021
(805) 517-6251 | dspondello@moorparkca.gov
www.moorparkca.gov

From: Doris Miller <dorisdebby@hotmail.com>
Sent: Tuesday, April 05, 2022 11:23 AM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Corrected comment lett

Mr. Spondello:
Please use this copy of the comment letter I submitted yesterday. I changed one significant word (a now for a not) and made a few other small changes, none of which affect actual content. They are highlighted in yellow so you can see I did not add any additional thoughts. I apologize for any inconvenience I am causing. I just got home from visiting my sister in Oregon who has been placed into hospice care and am not quite "home" yet mentally.
Doris Miller

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April 4, 2022

Doug Spondello, Deputy Community Development Director
City of Moorpark
Moorpark, CA

Re: Specific Plan I: Hitch Ranch DEIR

According to the City of Moorpark Safety Element for 2000-2005, "CEQA provides a means by which City officials and the public can identify the potential impacts a project will have on a community, and to allow for mitigation or avoidance of such impacts." I have reviewed the DEIR very carefully and find it to be deficient in those areas pertaining to hazard management and mitigation, water availability, and electrical availability. I do not believe the analyses given are current or appropriate for the proposed population density for this project plus the changes to the circulation pattern servicing this project. Therefore, neither City officials nor the public can garner a true picture of the actual costs associated with this project. The Ventura County Multi-Jurisdictional Mitigation Plan Update 2022 makes the following deficiencies very apparent:

1. **Extent of wildfire hazard**, especially the lack of an adequate evacuation route for the northwestern side of the city. All reliable sources point to continued and increasing chances for wildfire particularly in the northwestern part of the city. Evacuation of approximately an additional 2000 residents, if this project is approved, plus the current residents of Gabbert Canyon and their animals, amount to newspaper headline disaster nightmares that make the deaths in Paradise, CA seem minor in comparison. Dumping traffic from a four-lane arterial, without signalization, onto what becomes a narrow two-lane road over a railroad track, with a raging wildfire and dense smoke is, in my opinion, highly negligent. If I can see the inherent dangers, engineers should certainly be able to see them!
2. **Climate Change** has not been depicted to have near the expected impacts in the report as has been predicted by reliable sources. All indications are that Santa Ana Winds, storms, drought, and environmental dryness will play key roles in the welfare of our community. The ten hottest years since 1880 have occurred since 2005. These warmer temperatures also cause greater evaporation to our plant life, soils, and reservoirs.
3. **Train derailments** are quite possible due to human caused track interference, poor operator behaviors, or traffic accidents. Three very critical areas are on Moorpark Avenue, Spring Road, and Gabbert Road. If the trains are carrying hazardous chemicals, the disaster simply increases in size and health and safety effects.
4. **Aircraft incidents** have increased in likelihood with Edison's use of helicopters to assess power equipment issues and complete changes to their equipment. In addition, there appears to be much greater military activity lately.
5. **Water Availability:** It is difficult to believe there will be adequate water for a new development of this size when on 03/17/2022, NOAA forecasters predicted that "the drought gripping California and much of the West will persist and worsen…there will also be hotter-than-normal temperatures, reduced chances of rain, and increased fire risks likely." CA now has 87% of its area in a severe drought category with 35% in an

extreme drought category. The current U.S. Drought Monitor places Ventura County, as of February 2022, in the 3rd driest year to date over the past 128 years. 98.75% of Ventura County considered as severe drought status. In addition, groundwater reserves are decreasing and groundwater quality shows increasing nitrates and TDS. How is it possible to say we have enough water for 2000 more people and all the landscaping detailed in the Specific Plan I? All 58 CA counties are now under a drought emergency proclamation. DWR will reduce State Water Project allocations to 5% of requested supplies for 2022. Statewide reservoir levels are decreasing. Some reservoirs are at a mere 35% of capacity. Governor Newsom has asked every user to voluntarily reduce water consumption by 15%.

6. **Electrical Capacity**: Reduced water levels in reservoirs, along with Colorado River volume reduction, will place increasing strains on the electrical grid. When I review the public safety shutoffs we've had in the area over the last few years, it makes me very nervous about future cut backs. Should all homes be required to install solar panels and battery walls to provide for themselves when increasing population size strains the system even more? Analyses must be flawed to say "no problem providing electrical service".

I have limited my discussion to the DEIR since I understand that is the objective. Thank you for including my concerns. Please keep me on the list of those wanting to be informed of further actions on this project.

Doris Miller
6395 Gabbert Road
Moorpark, CA 93021
(805)529-3388

Submitted after Comment Period

I-Sinutko

-----Original Message-----
From: nsinutko <nsinutko@yahoo.com>
Sent: Monday, April 04, 2022 8:54 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: Hitch Ranch

To Whom It May Concern,

Thank you, for reaching out to the community in regards to the Hitch Ranch project. On paper, it is very appealing. In reality, this is a danger to all who live there and north of. As far as I know, the city has zero plans in the infrastructure to widen the streets and accommodate thousands of more vehicles. This is already a problem on the streets to the ingress and egress to this development.

I'm addition to, have you all taken into account the fire danger and getting citizens out, with adequate timing, during a brush fire? Brush fires have come through before and I have been here to help evacuate citizens while impending doom. I literally drove through the fire and was blinded by the smoke and felt the heat into the car. We had no vehicles in front of us, but imagine if we did??? I'm speaking of evacuating from the Moorpark Country Club to give you perspective.

Without plans for infrastructure, this plan is dead in the water. It is dangerous and at some point, the liability will fall back on the city for approving this.

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Thank you for your time regarding this matter.

Regards,
Nicole Sinutko

Sent from my iPhone

Submitted after Comment Period

I-Terjimanian

From: Alin Terjimanian <alinterjimanian@gmail.com>
Sent: Monday, April 04, 2022 11:11 PM
To: Douglas Spondello <DSpondello@MoorparkCA.gov>
Subject: New Homes to be built in Moorpark (Hitch Ranch)

To Whom It May Concern,

Our primary concern regarding the potential future developments is having access to evacuate during emergency situations. We certainly hope the city takes this into consideration and adds additional lanes into and out of Moorpark.

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Sincerely,
Alin and Ayk Terjimanian

3.0 REVISIONS TO THE DRAFT EIR

Revisions have been made to the Draft Environmental Impact Report (EIR) in response to comments on the Draft EIR. This chapter provides the location, chapter or section number, title, and page number from the Draft EIR, and shows the complete sentence(s) where the change was made. Text added to the Draft EIR is shown in underline format, and deleted text is shown in ~~strikethrough~~.

This chapter, in combination with the Draft EIR, the Responses to Comments, and the Mitigation Monitoring and Reporting Program (MMRP) constitutes the Final EIR. Due to the nature of the text changes that are presented below, the changes are cited individually rather than in a reproduction of the entire Draft EIR. This presentation of revisions to the Draft EIR is consistent with *State CEQA Guidelines* Section 15162 detailing required Final EIR contents.

Section 1.0, Executive Summary

The section discussing **Areas of Concern Known to the Lead Agency** starting on page 1.0-11 is revised as follows:

1.3.2 Areas of Concern Known to the Lead Agency

This Draft EIR identifies the areas of environmental concern and environmental issues to be resolved, which are known to the City of Moorpark or were raised by agencies and the public during the scoping process. The City has identified many of these concerns during the preparation of the Initial Study and Notice of Preparation. It should be noted that not all of these issues are related to environmental effects of the Project. The following summarizes the primary areas of concern that have been identified and where they are addressed in this Draft EIR:

- Project compatibility with on-site and surrounding land uses (**Section 3.1, Aesthetics; Section 3.10, Land Use and Planning**)
- Regional and local traffic (**Section 3.15, Transportation; Section 3.10, Land Use and Planning**)
- Provision of adequate infrastructure and services (**Section 3.13, Public Services, Section 3.17, Utilities and Service Systems**)
- Effects on biological resources (**Section 3.3, Biological Resources**)
- Appropriateness/intensity of proposed land uses (**Section 3.10, Land Use and Planning**)

- Effects on groundwater and surface water quality (**Section 3.7, Geology and Soils**; **Section 3.9, Hydrology and Water Quality**)
- Aesthetic changes to the site associated with project implementation (**Section 3.1, Aesthetics**)
- Hillside Ordinance analysis **(Section 3.1, Aesthetics, Section 3.6, Geology and Soils)**
- Concerns regarding exposure to radon (**Section 3.8, Hazards and Hazardous Materials**)
- Concerns regarding wildfire (**Section 3.8, Hazards and Hazardous Materials, Section 3.13, Public Services, and Section 3.18, Wildfire)**

The section discussing mitigation measure CM-AQ-1 starting on page 1.0-17 is revised as follows:

CM AQ-1: The following control measures provided in the *VCAPCD Air Quality Assessment Guidelines* to minimize the generation of fugitive dust (PM10 and PM2.5), ROC, and NO_x during construction activities shall be implemented during construction of the Proposed Project:

- The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust.
- Pre-grading/excavation activities shall include watering the areas to be graded or excavated before grading or excavation operations commences. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.
- Fugitive dust produced during grading excavation and construction activities shall be controlled by the following activities:
- All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization material, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible.
- Graded and/or excavated inactive areas of the construction site shall be monitored at least weekly for dust stabilization. Soil stabilization methods, such as water and

roll-compaction, and environmentally safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally safe dust suppressants to prevent excessive fugitive dust.

- Signs limiting traffic to 15 miles per hour or less shall be posted on site.
- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off site or on site. The site superintendent/supervisor shall use discretion in conjunction with the VCAPCD in determining when winds are excessive.
- Adjacent streets and roads shall be swept at least once per day, preferably at the end of the day if visible soil material is carried over to adjacent streets and roads.
- Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations.
- <u>During the construction phase, signs shall be posted on site and viewable to the public with the VCAPCD Complaints Hotline phone number 805-303-3700.</u>

Timing/Implementation: During construction activities

Enforcement/Monitoring: City of Moorpark Community Development and Public Works Departments

The section discussing mitigation measure CM-AQ-2 starting on page 1.0-19 is revised as follows:

CM AQ-2: During construction contractors shall comply with the following measures to reduce NO_x and ROC from heavy equipment as recommended by the VCAPCD in its *Ventura County Air Quality Assessment Guidelines*:

- Minimize equipment idling time <u>to no more than 5 minutes, as required in Title 13, CCR §2485, §2449(d)(2), respectively. The idling limit does not apply to: (1) idling</u>

when queuing; (2) idling to verify that the vehicle is in safe operating condition; (3) idling for testing, servicing, repairing or diagnostic purposes; (4) idling necessary to accomplish work for which the vehicle was designed (such as operating a crane); (5) idling required to bring the machine system to operating temperature, and (6) idling necessary to ensure safe operation of the vehicle.

- Maintain equipment engines in good condition and in proper tune as per manufacturer's specifications.
- Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.
- Use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, if feasible.

Timing/Implementation: During construction activities

Enforcement/Monitoring: City of Moorpark Community Development Department

The text for mitigation measure **BR-8** on page 1.0-26 has been modified as shown below:

BR-8: In order to comply with city, state, and federal regulations regarding impacts to USACE, CDFW and RWQCB jurisdictional areas permitting must be executed pursuant to Sections 401 and 404 of the federal Clean Water Act and the *California Fish and Game Code* (Section 1602), for all impacts to WOTUS and streambeds. All conditions of the agreements with these agencies designed to minimize impacts to biological resources shall be implemented.

The text for mitigation measure **BR-10** on page 1.0-28 has been modified as shown below:

BR-10: A tree removal permit must be obtained from the City prior to removal of trees that meet the mature tree criteria within the City's tree ordinance (No. 101). Permits will not be issued until the project has been approved by the City. Removed trees that are determined to be diseased and/or infested with insect pests shall be chipped onsite to prevent the spread to offsite trees. The loss of trees shall be mitigated by using the appraised value of each removed tree and then applying the value towards upgrading the size of the tree plantings associated with the project. The proposed replacement tree species shall emphasize native species and must be consistent with the City's Landscape Design Standards and Guidelines to ensure that invasive species will not be

used. In accordance with the Landscape Design Standards and Guidelines, 'enhanced landscaping' shall be installed that is equal to the value of the trees removed.

The text for mitigation measure **HM-1** on page 1.0-43 has been modified as shown below:

HM-1 Water Well Mitigation

If any water wells are found during grading or development of the property, the following minimum conditions for well destruction shall be met:

- An application for a permit for the destruction of the well shall be filed with the County of Ventura Public Works, per County Ordinance No. 4468 (Well Ordinance) and per the City of Moorpark Municipal Code Chapter 8.40.
- Pump and motor shall be removed, and the interior of the well shall be filled with inert material (clean sand or gravel) from total depth to within 40 feet of ground surface or remove debris in well casing to a depth of 40 feet.
- Well casing shall be perforated at least every foot opposite the sealing zone from a depth of 40 feet to within 10 feet of finish grade. Perforations shall be placed on alternating sides of the casing.
- Neat cement sealing material shall be applied from a depth of 40 feet to within 5 feet of finish grade by means of a grout pipe placed within 2 feet of the base of the sealing zone. If static water level is deeper than 40 feet, grout pipe is not necessary.
- Casing shall be removed to a depth of 5 feet below finish grade, and work area backfilled with native materials.
- County of Ventura Public Works Inspector shall be present during casing perforation work and placement of all sealing material. 24 hour advance notice is required for Public Works Inspections.
- All work shall be performed by a well contractor licensed in the State of California and registered with the County of Ventura.

Timing/Implementation: During ground moving activities in event wells are discovered

Enforcement/Monitoring: City of Moorpark Community Development and/or Public Works Department and Ventura County Public Works

The second bullet of mitigation measure **WF-2** on page 1.0-77 is revised as follows:

- Provide a noncombustible, 6-foot high concrete masonry unit (CMU) wall at the top of the manufactured slopes behind the units within PA3 along the eastern property boundary. These walls will be installed to function as heat-deflecting walls; vining plants will be established as landscape screening. Note: the use of vining plants may be restricted in FMZ Zones 0, 1, and 2.

Mitigation Measure WF-3 on page 1.0-78 is revised as follows:

WF-3: A fully irrigated landscape, planted with drought-tolerant, fire-resistive plants shall be implemented ~~in accordance with VCFD Fire Hazard Reduction Program Plant Reference Guide (Appendix D of Appendix 3.18 of this EIR). No undesirable, highly flammable plant species shall be planted, as listed in the VCFD Prohibited Plant List (Appendix E of Appendix 3.18 of this EIR)~~. All landscape and fuel modification plans are required to be submitted to the City of Moorpark Community Development Department and the Ventura County Fire Department for review and approval. This includes developer installed landscaping and any landscape installed by individual property owners. The landscaping shall be routinely maintained and shall be watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would minimize ignition by embers from a wildfire.

Timing/Implementation: Prior to issuance of building permits

Enforcement/Monitoring: Ventura County Fire Department, City of Moorpark Community Development Department

Mitigation Measure WF-4 on page 1.0-78 is revised as follows:

WF-4: The project HOA shall ~~hire a qualified~~ coordinate with the Ventura County Fire Department ~~approved third party fuel modification zone inspector~~ to provide annual inspections. A copy of each inspection report ~~should~~ shall be provided to the City of Moorpark Community Development Director.

Timing/Implementation: Annually, following project occupancy.

Enforcement/Monitoring: Ventura County Fire Department, City of Moorpark Community Development Department

Section 2.0, Project Description

Paragraph five on page 2.0-27 is revised as follows:

State of California, Regional Water Quality Control Board. Pursuant to the federal Clean Water Act (Section 402(g)) and state General Construction Activity Storm Water Permit, a National Pollution Discharge Elimination System (NPDES) permit would be required for the Project-related construction activities, including a dewatering permit and 401 Certification and WDRs for Retention Basins, in addition to a General Storm Water Permit for Construction and Storm Water Pollution Prevention Plan (SWPPP).

Section 3.2, Air Quality

The section discussing rules and regulations that the Proposed Project would be subject to on page 3.2-7 is revised as follows:

To implement these strategies, the VCAPCD Board has adopted specific rules and regulations to limit emissions from stationary and mobile sources and activities within the County. These rules and regulations identify specific pollution-reduction measures, which must be implemented in association with various uses and activities. These rules not only regulate the emissions of criteria pollutants, but also emissions of TACs and HAPs. The rules and regulations are subject to ongoing refinement by the VCAPCD. Enforcement of these rules and regulations is carried out through a permitting process that monitors emissions generated by stationary sources, such as power plants, manufacturing operations, and large and small businesses, that use products that release ozone-forming precursors or TACs into the atmosphere. The Proposed Project would be subject to the VCAPCD rules and regulations to reduce project-related emissions and minimize

potential air quality impacts. Specifically, the Proposed Project would be subject to rules and regulations related to construction regarding nuisance dust impacts, equipment exhaust, and architectural coating. In addition, operational activities associated with the proposed residences would be required to comply with rules and regulations related to nuisance, natural gas-fired water heaters, and architectural coatings. These rules and regulations are discussed in further detail below. The VCAPCD does not regulate mobile emissions such as those from automobiles.

The section discussing geographical air basins on page 3.2-12 is revised as follows:

There are four main meteorological conditions that affect air quality in the valley: a regional, semi-permanent high-pressure system; wind currents created or affected by local topography; Santa Ana winds; and seasonal storms. The dispersion of air pollutants in ~~the Oxnard Plain Airshed, in which~~ the City of Moorpark ~~is located,~~ is often restricted by frequent temperature inversions created by the semi-permanent high-pressure system. The temperature inversion is normally just below the summit areas of the surrounding mountains, which tend to trap air pollutants in a limited, near-surface atmospheric volume.

The section discussing air monitoring stations within the VCAPCD on page 3.2-14 is revised as follows:

To identify ambient concentrations of the criteria pollutants, the VCAPCD operates air quality monitoring stations throughout Ventura County. These stations are located in El Rio, Ojai, Piru, ~~San Nicolas Island,~~ Simi Valley, and Thousand Oaks~~, and Ventura~~.

The section discussing air monitoring data within the VCAPCD on page 3.2-15 is revised as follows:

The monitoring stations located closest to the Proposed Project site and most representative of air quality within the Hitch Ranch Specific Plan area are the Simi Valley–Cochran Street and Thousand Oaks–Moorpark Road stations. Both stations monitor O_3 and PM2.5 while the Simi Valley monitoring station also monitors ~~NO_2 and~~ PM10. CO monitoring was eliminated in Ventura County in 2004 as part of network changes in response to the proposed National Monitoring Strategy set forth by the U.S. EPA. The decision to eliminate CO monitoring was approved by both the U.S. EPA and CARB. Ventura County has met the CO standard for some time now. In addition, SO_2 monitoring in Ventura County was eliminated in 2004 and ambient

concentrations for lead and sulfate are well below the state standards.[1] NO_2 also no longer exceeds the health-based standard levels and is not listed in the monitoring data.[2]

A summary of the monitored values for O_3, ~~NO_2,~~ PM10, and PM2.5 at the Simi Valley monitoring station for the ~~past~~ three years prior to the Coronavirus pandemic which began in 2020, is presented in **Table 3.2-5, Simi Valley-Cochran Street Air Monitoring Station Ambient Pollutant Concentrations**. The values show that the Simi Valley monitoring station has registered values above state and/or federal standards for O_3, and PM10.

A summary of the monitored values for O_3 and PM2.5 at the Thousand Oaks monitoring station for the ~~past~~ three years prior to the start of the ongoing Coronavirus pandemic, which began in 2020, is presented in **Table 3.2-6, Thousand Oaks-Moorpark Road Air Monitoring Station Ambient Pollutant Concentrations**. The values show that the Thousand Oaks monitoring station has registered values above state and federal standards for O_3.

The section discussing local sources of air pollutant emissions on page 3.2-15 is revised as follows:

Motor vehicles, including those traveling on nearby highways such as SR 23 and SR 118, are the primary source of pollutants in the region. There are no large stationary sources that would impact the residents of the Proposed Project in the vicinity of the Project site.

As NO_2 no longer exceeds the health-based standard levels it has been removed from the monitoring data.[3] Table 3.2-5 and Table 3.2-6 on page 3.2-16 to 3.2-17 are revised as follows:

Table 3.2-5
Simi Valley-Cochran Street Air Monitoring Station Ambient Pollutant Concentrations

Pollutant	Standards[1]	Year		
		~~2016~~2017	~~2017~~2018	~~2018~~2019
OZONE (O_3)				
Maximum 1-hour concentration monitored (ppm)		~~0.101~~0.103	~~0.103~~0.101	~~0.101~~0.089
Maximum 8-hour concentration monitored (ppm)		~~0.083~~0.094	~~0.094~~0.092	~~0.092~~0.078
Number of days exceeding state 1-hour standard	0.09 ppm	~~1~~3	~~3~~2	~~2~~0
Number of days exceeding federal/state 8-hour standard	0.070 ppm	~~7~~20	~~20~~14	~~14~~7
~~**NITROGEN DIOXIDE (NO_2)**~~				
~~Maximum 1-hour concentration monitored (ppm)~~		~~0.039~~	~~0.046~~	~~0.043~~
~~Annual average concentration monitored (ppm)~~		~~0.008~~	~~0.008~~	~~0.008~~

1 Ventura County Air Pollution Control District, *Final 2009 Ambient Air Monitoring Network Plan*, (2009) 13.

2 California Air Resources Board, *iADAM Frequently Asked Questions*, 5.

3 California Air Resources Board, *iADAM Frequently Asked Questions*, 5.

Pollutant	Standards[1]	Year		
		~~2016~~2017	~~2017~~2018	~~2018~~2019
~~Number of days exceeding state 1-hour standard~~	~~0.18 ppm~~	~~0~~	~~0~~	~~0~~
RESPIRABLE PARTICULATE MATTER (PM10)				
Maximum 24-hour concentration monitored (µg/m³)		~~156.3~~149.8	~~149.8~~107.6	~~107.6~~124.3
Annual average concentration monitored (µg/m³)		~~22.9~~24.0	~~24.0~~23.5	~~23.5~~19.5
Number of samples exceeding state standard	50 µg/m³	49	~~9~~6.1	~~6.1~~4.0
Number of samples exceeding federal standard	150 µg/m³	~~1~~0	0	0
FINE PARTICULATE MATTER (PM2.5)				
Maximum 24-hour concentration monitored (µg/m³)		~~34.9~~31.3	~~31.3~~29.6	~~29.6~~20.0
Annual average concentration monitored (µg/m³)		~~8.7~~9.2	~~9.2~~8.7	~~8.7~~7.6
Number of samples exceeding federal standard	35 µg/m³	0	0	0

Source: California Air Resources Board, "Air Quality Data Statistics," http://www.arb.ca.gov/adam/. 2019.
NA = not available
[1] *Parts by volume per million of air (ppm), micrograms per cubic meter of air (µg/m³), or annual arithmetic mean (aam).*
[2] *The 8-hour federal O_3 standard was revised from 0.075 ppm to 0.070 ppm in 2015. The statistics shown are based on the 2015 standard of 0.070 ppm.*

Table 3.2-6
Thousand Oaks-Moorpark Road Air Monitoring Station Ambient Pollutant Concentrations

Pollutant	Standards[1]	Year		
		~~2016~~2017	~~2017~~2018	~~2018~~2019
OZONE (O_3)				
Maximum 1-hour concentration monitored (ppm)		~~0.080~~0.090	~~0.090~~0.080	~~0.080~~0.082
Maximum 8-hour concentration monitored (ppm)		~~0.076~~0.073	0.073	~~0.073~~0.074
Number of days exceeding state 1-hour standard	0.09 ppm	0	0	0
Number of days exceeding federal/state 8-hour standard	0.070 ppm	~~1~~6	~~6~~1	1
FINE PARTICULATE MATTER (PM2.5)				
Maximum 24-hour concentration monitored (µg/m³)		~~35.2~~32.0	~~32.0~~41.5	~~41.5~~24.5
Annual average concentration monitored (µg/m³)		~~9.6~~8.9	~~8.9~~9.2	~~9.2~~7.2
Number of samples exceeding federal standard	35 µg/m3	0	~~0~~1	~~1~~0

Source: California Air Resources Board, "Air Quality Data Statistics," http://www.arb.ca.gov/adam/. 2019.
NA = not available
[1] *Parts by volume per million of air (ppm), micrograms per cubic meter of air (µg/m³), or annual arithmetic mean (aam).*
[2] *The 8-hour federal O_3 standard was revised from 0.075 ppm to 0.070 ppm in 2015. The statistics shown are based on the 2015 standard of 0.070 ppm.*

The section discussing air monitoring data within the VCAPCD on page 3.2-15 is revised as follows:

> The monitoring stations located closest to the Proposed Project site and most representative of air quality within the Hitch Ranch Specific Plan area are the Simi Valley–Cochran Street and Thousand Oaks–Moorpark Road stations. Both stations monitor O_3 and PM2.5 while the Simi Valley monitoring station also monitors ~~NO_2 and~~ PM10. CO monitoring was eliminated in

Ventura County in 2004 as part of network changes in response to the proposed National Monitoring Strategy set forth by the U.S. EPA. The decision to eliminate CO monitoring was approved by both the U.S. EPA and CARB. Ventura County has met the CO standard for some time now. In addition, SO_2 monitoring in Ventura County was eliminated in 2004 and ambient concentrations for lead and sulfate are well below the state standards.[4] NO_2 also no longer exceeds the health-based standard levels and is not listed in the monitoring data.[5]

A summary of the monitored values for O_3, ~~NO_2~~, PM10, and PM2.5 at the Simi Valley monitoring station for the ~~past~~ three years prior to the ~~2020~~ Coronavirus pandemic which began in 2020, is presented in **Table 3.2-5, Simi Valley-Cochran Street Air Monitoring Station Ambient Pollutant Concentrations**. The values show that the Simi Valley monitoring station has registered values above state and/or federal standards for O_3, and PM10.

A summary of the monitored values for O_3 and PM2.5 at the Thousand Oaks monitoring station for the ~~past~~ three years prior to the ~~2020~~ Coronavirus pandemic which began in 2020, is presented in **Table 3.2-6, Thousand Oaks-Moorpark Road Air Monitoring Station Ambient Pollutant Concentrations**. The values show that the Thousand Oaks monitoring station has registered values above state and federal standards for O_3.

The section discussing local sources of air pollutant emissions on page 3.2-15 is revised as follows:

Motor vehicles, including those traveling on nearby highways such as SR 23 and SR 118, are the primary source of pollutants in the region. There are no large stationary sources that would impact the residents of the Proposed Project in the vicinity of the Project site.

The section discussing proximity to SR-118 on page 3.2-18 is revised as follows:

In addition, the nearest freeways (State Routes 23 and 118) are located over 1-mile and over 2,100 feet, respectively, from the Project site. Thus, the project would be consistent with CARB's recommendation to avoid citing new sensitive land uses within 500 feet of a freeway, urban roads with 100,000 vehicles per day, or rural roads with 50,000 vehicles per day. For these reasons, no significant impacts to on-site sensitive receptors are anticipated with respect to existing mobile source TACs.

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4 Ventura County Air Pollution Control District, *Final 2009 Ambient Air Monitoring Network Plan*, (2009) 13.

5 California Air Resources Board, *iADAM Frequently Asked Questions*, 5.

The section discussing mitigation measure CM-AQ-1 starting on page 3.2-36 is revised as follows:

CM AQ-1: The following control measures provided in the *VCAPCD Air Quality Assessment Guidelines* to minimize the generation of fugitive dust (PM10 and PM2.5), ROC, and NO_x during construction activities shall be implemented during construction of the Proposed Project:

- The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust.

- Pre-grading/excavation activities shall include watering the areas to be graded or excavated before grading or excavation operations commences. Application of water (preferably reclaimed, if available) should penetrate sufficiently to minimize fugitive dust during grading activities.

- Fugitive dust produced during grading excavation and construction activities shall be controlled by the following activities:

  - All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization material, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible.

  - Graded and/or excavated inactive areas of the construction site shall be monitored at least weekly for dust stabilization. Soil stabilization methods, such as water and roll-compaction, and environmentally safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally safe dust suppressants to prevent excessive fugitive dust.

  - Signs limiting traffic to 15 miles per hour or less shall be posted on site.

  - During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and

excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off site or on site. The site superintendent/supervisor shall use discretion in conjunction with the VCAPCD in determining when winds are excessive.

- Adjacent streets and roads shall be swept at least once per day, preferably at the end of the day if visible soil material is carried over to adjacent streets and roads.

- Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations.

- During the construction phase, signs shall be posted on site and viewable to the public with the VCAPCD Complaints Hotline phone number 805-303-3700.

Timing/Implementation: During construction activities

Enforcement/Monitoring: City of Moorpark Community Development and Public Works Departments

The section discussing mitigation measure CM-AQ-2 starting on page 3.2-36 is revised as follows:

CM AQ-2: During construction contractors shall comply with the following measures to reduce NO_x and ROC from heavy equipment as recommended by the VCAPCD in its *Ventura County Air Quality Assessment Guidelines*:

- Minimize equipment idling time to no more than 5 minutes, as required in Title 13, CCR §2485, §2449(d)(2), respectively. The idling limit does not apply to: (1) idling when queuing; (2) idling to verify that the vehicle is in safe operating condition; (3) idling for testing, servicing, repairing or diagnostic purposes; (4) idling necessary to accomplish work for which the vehicle was designed (such as operating a crane); (5) idling required to bring the machine system to operating temperature, and (6) idling necessary to ensure safe operation of the vehicle.

- Maintain equipment engines in good condition and in proper tune as per manufacturer's specifications.

- Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.
- Use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, if feasible.

Timing/Implementation: During construction activities

Enforcement/Monitoring: City of Moorpark Community Development Department

Section 3.3, Biological Resources

The text for mitigation measure **BR-8** on page 3.3-84 has been modified as shown below:

BR-8: In order to comply with city, state, and federal regulations regarding impacts to USACE, CDFW and RWQCB jurisdictional areas permitting must be executed pursuant to Sections 401 and 404 of the federal Clean Water Act and the *California Fish and Game Code* (Section 1602), for all impacts to WOTUS and streambeds. All conditions of the agreements with these agencies designed to minimize impacts to biological resources shall be implemented.

The text for mitigation measure **BR-10** on page 3.3-85 has been modified as shown below:

BR-10: A tree removal permit must be obtained from the City prior to removal of trees that meet the mature tree criteria within the City's tree ordinance (No. 101). Permits will not be issued until the project has been approved by the City. Removed trees that are determined to be diseased and/or infested with insect pests shall be chipped onsite to prevent the spread to offsite trees. The loss of trees shall be mitigated by using the appraised value of each removed tree and then applying the value towards upgrading the size of the tree plantings associated with the project. The proposed replacement tree species shall emphasize native species and must be consistent with the City's Landscape Design Standards and Guidelines to ensure that invasive species will not be used. In accordance with the Landscape Design Standards and Guidelines, 'enhanced landscaping' shall be installed that is equal to the value of the trees removed.

Section 3.8, Hazards and Hazardous Materials

The following is added to **3.8.2.2, State Regulations** on page 3.8-3:

Board of Forestry and Fire Protection

The project is located within a Local Responsibility Area (LRA) Very High Fire Severity Zone (VHFHSZ) and shall comply with the minimum standards of the California Code of Regulations, Title 14, Division 1.5, Chapter 7, Article 6, Subchapter 2, "SRA/VHFHSZ Fire Safe Regulations" (CCR T-14 FSR), unless modified by more restrictive local ordinances and requirements. These regulations are enforced by the local fire authority — Ventura County Fire Protection District.

Paragraph five on page 3.8-4 is revised as follows:

Ventura County Fire Protection District

The Proposed Project would be subject to requirements of the Ventura County Fire Department ~~Protection District~~ (VCF~~P~~D), which ~~sets~~ enforces State and local standards for water supplies, access, hazard abatement, and fire protection equipment. CCR T-14 FSR, VCFPD Ordinance 29 and 31, VCFPD Standard 501, and sets standards for these items including the requirement for secondary access. ~~Fire Prevention Standards 14.6. sets access road standards and includes requirements for secondary access.~~

Paragraph four on page 3.8-15 is revised as follows:

The *City of Moorpark Municipal Code* identifies Hazardous Fire Areas ~~high fire hazard areas~~ as any area within 500 feet of uncultivated brush, grass, or forest-covered land wherein an authorized representative of the VCFPD determines that a potential fire hazard exists due to the presence of such flammable growth. Potential fire hazards are an important safety concern associated with the vegetation surrounding the specific plan site. Portions of the site are currently covered with highly combustible chaparral vegetation. In the summer and autumn, these areas of the site are highly susceptible to uncontrollable fire hazards because of reduced soil and vegetation moisture, compounded by dry Santa Ana winds that accelerate and intensify wildland fires.

Paragraph four on page 3.8-27 is revised as follows:

> According to the Fire Protection Division of the Ventura County Fire Protection District, the specific plan area is a designated "Hazardous Fire Area". ~~high fire hazard area."~~ A "Hazardous Fire Area" ~~"high fire hazard area"~~ is defined as any area or structure within 500 feet of standing brush or grass. In addition, the site is categorized as being within a Very High Fire Hazard Severity Zone (VHFHSZ) by the California Department of Forestry and Fire Protection (CAL FIRE).

Paragraph three on page 3.8-28 is revised as follows:

> According to the ~~Fire Protection Division of the~~ Ventura County Fire Department (VCFD), fire protection services in the City of Moorpark are adequate, and will be able to serve future growth in the City.

Paragraph four on page 3.8-28 is revised as follows:

> The frequency and nature of future emergency calls is difficult to predict. No uses allowed in the specific plan are unusual or have the potential to generate an unusual number or type of calls for service. However, the specific plan site is located in an area designated as a "Hazardous Fire Area". ~~"high fire hazard area."~~ Construction would, therefore, be required to comply with all applicable building and fire code requirements. These requirements may include items such as types of roofing materials, building construction, brush clearance, fire hydrant flows, hydrant spacing, access and design, and other hazard reduction programs, as set forth by VCFD.

The second bullet on page 3.8-29 is revised as follows:

- Prior to combustible construction, an all-weather access road/driveway and the first lift of the access road pavement must be installed. Once combustible construction starts a minimum 20-foot clear width access road/driveway must remain free of obstruction during any construction activities within the development. All access roads/driveways must have a minimum vertical clearance of 13 feet 6 inches and a minimum inside turning radius of 50 feet.~~outside turning radius of 40 feet~~. ***Ventura County Fire Protection District, Fire Prevention Bureau, Ordinance Number 29 and CCR T-14 FSR***

The second bullet on page 3.8-30 is revised as follows:

- When only one access point is provided, the maximum length of the access road may not exceed 800 feet. ***Ventura County Fire Protection District, Fire Prevention Bureau, Ordinance Number 29 and CCR T-14 FSR***

Mitigation measure HM-1 on page 3.8-31 is revised as follows:

HM-1 Water Well Mitigation

If any water wells are found during grading or development of the property, the following minimum conditions for well destruction shall be met:

- An application for a permit for the destruction of the well shall be filed with the County of Ventura Public Works, per County Ordinance No. 4468 (Well Ordinance) and per the City of Moorpark Municipal Code Chapter 8.40.

- Pump and motor shall be removed, and the interior of the well shall be filled with inert material (clean sand or gravel) from total depth to within 40 feet of ground surface or remove debris in well casing to a depth of 40 feet.

- Well casing shall be perforated at least every foot opposite the sealing zone from a depth of 40 feet to within 10 feet of finish grade. Perforations shall be placed on alternating sides of the casing.

- Neat cement sealing material shall be applied from a depth of 40 feet to within 5 feet of finish grade by means of a grout pipe placed within 2 feet of the base of the sealing zone. If static water level is deeper than 40 feet, grout pipe is not necessary.

- Casing shall be removed to a depth of 5 feet below finish grade, and work area backfilled with native materials.

- County of Ventura Public Works Inspector shall be present during casing perforation work and placement of all sealing material. 24 hour advance notice is required for Public Works Inspections.

- All work shall be performed by a well contractor licensed in the State of California and registered with the County of Ventura.

Timing/Implementation: During ground moving activities in event wells are discovered

Enforcement/Monitoring: City of Moorpark Community Development and/or Public Works Department and Ventura County Public Works

Section 3.9, Hydrology and Water Quality

Paragraph five on page 3.9-7 is revised as follows:

> The Los Angeles Regional Water Quality Control Board's (LARWCB) has established numeric sizing criteria for post-construction best management practices (BMPs) for new development within Ventura County and the incorporated cities under Order No. R4-2021-01052010-0108. The proposed numeric sizing criteria is intended to reduce adverse impacts to Los Angeles regional waters caused by new sources of urban pollution and increased volumes of storm water and non-storm water flows resulting from new development.

Paragraph one on page 3.9-29 is revised as follows:

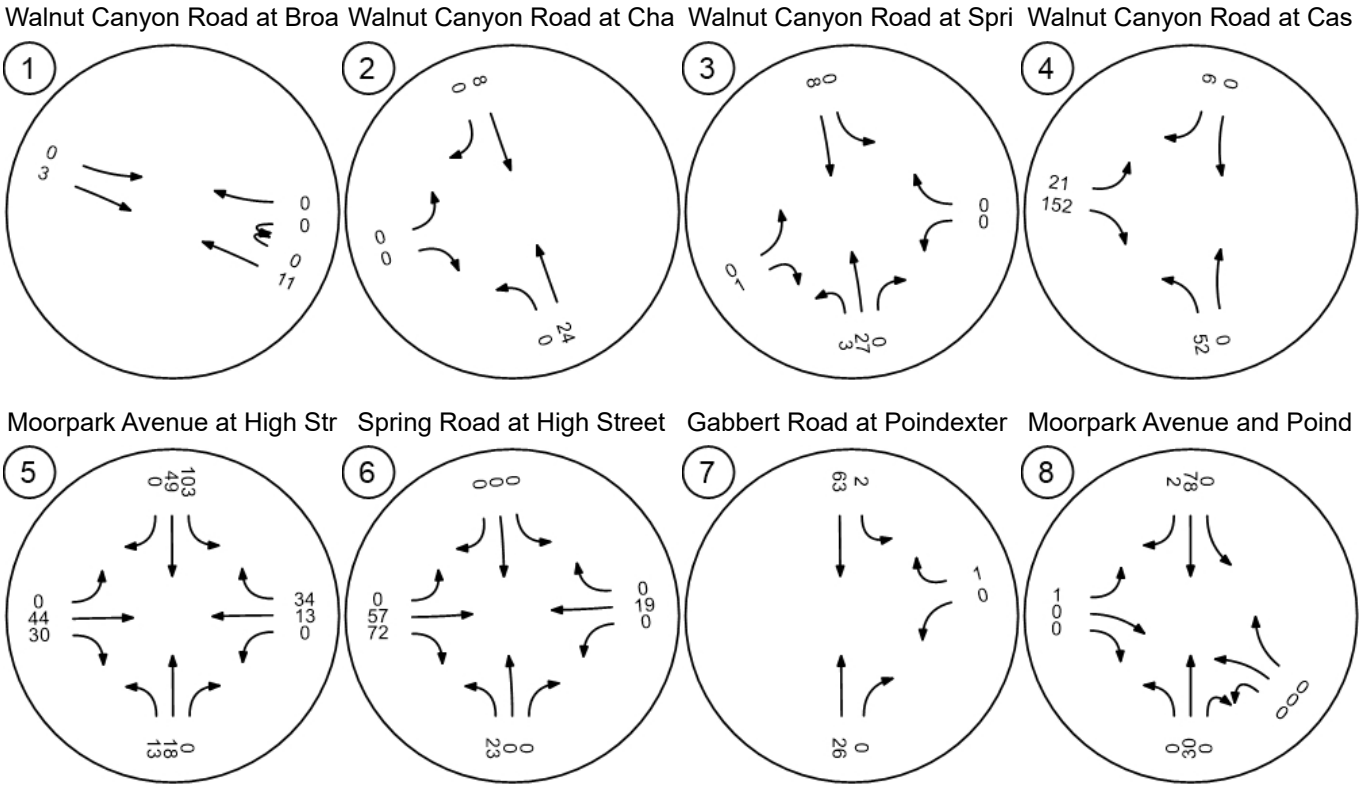
> The established NPDES Phase II Stormwater Program in effect for the Project site is in compliance with the mandates of NPDES Permit No. R4-2021-0105~~2010-0108~~. The design and performance requirements of this permit are detailed in the Ventura Countywide Water Quality manual.

Paragraph one on page 3.9-30 is revised as follows:

> The Los Angeles Regional Water Quality Control Board's (LARWCB) has established numeric sizing criteria for post-construction BMPs for new development within Ventura County and the incorporated cities under Order No. R4-2021-0105~~2010-0108~~. The proposed numeric sizing criteria is intended to reduce adverse impacts to Los Angeles regional waters caused by new sources of urban pollution and increased volumes of storm water and non-storm water flows resulting from new development.

Section 3.10, Land Use

Appendix 3.10 - Figure 3.10-4a Project Traffic Volume - Weekday AM Peak Hour is presented below.



SOURCE: Impact Sciences, Inc., 2021

FIGURE **3.10-4a**

IMPACT SCIENCES

Project Traffic Volume - Weekday AM Peak Hour

1318.003•01/21

Section 3.13, Public Services

The third paragraph on page 3.13-1 is revised as follows:

California Fire Code

The California Fire Code (Title 24 CCR, Part 9) establishes minimum requirements to safeguard public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. Chapter 33 of the California Fire Code (CFC)~~CCR~~ contains requirements for fire safety during construction and demolition.

The last paragraph on page 3.13-2 is revised as follows:

Two fire stations are near the specific plan area, Fire Station 42 and Fire Station 40. Fire Station 42 is located at 295 High Street, approximately 0.5 mile east of the specific plan area. Fire Station 42 would be the primary response engine company. Response time from this station to the specific plan area would be approximately 3-minutes (travel time only). Fire Station 42 is staffed with a crew of three per 24-hour shift. The station is equipped with an engine, a reserve engine and a brush engine.

The fifth paragraph on page 3.13-3 is revised as follows:

According to the ~~Fire Protection Division of the~~ Ventura County Fire Department (VCFFD), the Specific Plan Area is a designated "Hazardous Fire Area". ~~"high fire hazard area."~~ A "Hazardous Fire Area" ~~"high fire hazard" area~~ is defined as any area or structure within 500 feet of standing brush or grass.

The last paragraph on page 3.13-3 is revised as follows:

Emergency Assistance. The Ventura County Fire Department is a part of the State of California Master Mutual Aid Response Program. VCFD has 33~~37~~ facilities Countywide, from which resources can be drawn.

The second paragraph on page 3.13-4 is revised as follows:

According to the ~~Fire Protection Division of the~~ Ventura County Fire Department (VCFD), fire protection services in the City of Moorpark are adequate, and will be able to serve future growth in the City. Future fire service needs are evaluated annually, based upon the current population, projected population, and proposed new development. A fee is assessed by VCFD

on all new development at the time building permits are issued to ensure that VCFD grows in concert with the City's population.

The final paragraph on page 3.13-5 is revised as follows:

Staffing Needs. Fire protection ~~prevention~~ services within the City of Moorpark are currently adequate, and are expected to serve the City for the future.

The second paragraph on page 3.13-6 is revised as follows:

Response Distance/Time. As previously mentioned, Fire Stations 42 and 40 are located 0.5 and 1.5 miles from the Project site, respectively. These distances are considered by VCFD to be reasonable to serve the Project site, given that the stations serve the entire City of Moorpark. Fire Station 42 would provide primary response services to the Project site and Station 40 would provide supplemental response services. Fire Station 42 would be able to respond to the specific plan site in approximately 3-minutes (travel time only), which is under the VCFD performance goal of 4- to 7-minutes. The proposed specific plan is, therefore, not anticipated to result in significant impacts to fire protection response times in the City of Moorpark. Refer also to **Section 3.18, Wildfire** in this EIR.

The final paragraph on page 3.13-6 is revised as follows:

Anticipated Frequency and Nature of Emergency Occurrence (Special Fire Protection Problems). The frequency and nature of future emergency calls is difficult to predict. No uses allowed in the Specific Plan are unusual or have the potential to generate an unusual number or type of calls for service. However, the Specific Plan site is located in an area designated as a "Hazardous Fire Area". ~~"high fire hazard area."~~ Construction would, therefore, be required to comply with all applicable building and fire code requirements. These requirements may include items such as types of roofing materials, building construction, brush clearance, fire hydrant flows, hydrant spacing, access and design, and other hazard reduction programs, as set forth by VCFD. With the implementation of standard conditions and requirements as outlined below, potential fire hazard impacts would be reduced to less than significant levels. Refer also to **Section 3.18, Wildfire** in this EIR.

The second bullet on page 3.13-7 is revised as follows:

- Prior to combustible construction, an all-weather access road/driveway and the first lift of the access road pavement must be installed. Once combustible construction starts a minimum 20-foot

clear width access road/driveway must remain free of obstruction during any construction activities within the development. All access roads/driveways must have a minimum vertical clearance of 13 feet 6 inches and a minimum inside turning radius of 50 feet. ~~outside turning radius of 40 feet.~~

The last bullet on page 3.13-8 is revised as follows:

- ~~The developer shall provide landscape/fuel modification plans prepared by a licensed landscape architect to VCFD for review and approval prior to the issuance of certificates of occupancy. The use of drought tolerant, fire resistant, native vegetation shall be incorporated into the landscape/fuel modification plans.~~

- The developer shall provide Fuel Modification Zone (FMZ) and or Landscape plans prepared by a licensed landscape architect to VCFD for review and approval as follows:

  A. Tracts and multiple lot projects:

  Plans shall be submitted for approval before the start of construction. This includes slopes, common areas, and individual lot landscaping install by the developer.

  B. Individual Parcels:

  Plans shall be submitted for approval prior to installation and or modification of any vegetation / landscape. This includes owner installed landscaping after original purchase of a parcel or building from the developer.

  The use of drought-tolerant, ignition resistant, native vegetation shall be incorporated into the landscape/fuel modification plans. Plants and trees listed on the VCFD Prohibited Plant List shall not be used.

Section 3.15, Transportation

The second paragraph on page 3.15-8 is revised as follows:

The City of Moorpark has not adopted a local VMT threshold but anticipates establishing a threshold as part of a comprehensive General Plan update and Program EIR currently underway. The Ventura County Public Works Agency Transportation Department (VCPW TD)~~Transportation Commission (VCTC)~~ has drafted, although not yet adopted, guidance in accordance with the Governor's Office of Planning and Research (OPR) that suggests the minimum reduction standard threshold for residential, office and industrial projects be 15% below the existing per capita VMT.[2] The project's operational year would begin in 2027. Based

on SCAG's 2020 Connect SoCal Regional Transportation Plan / Sustainable Communities Strategy (RTP/SCS, Connect SoCal) Growth Forecast projections and California Air Resources Board's EMFAC model, the 2027 baseline VMT per capita for Ventura County would be 18.6 miles. This will be used as the baseline per capita VMT to determine if the project would be below the 15% threshold.

2: Ventura County Public Works. 2021. Available at: https://s29422.pcdn.co/wp-content/uploads/2020/06/VMT-Draft-for-Public-Review-Clean-Version.pdf

The second paragraph on page 3.15-18 is revised as follows:

The City of Moorpark has not currently adopted a local VMT significance threshold. However, the Ventura County Public Works Agency Transportation Department (VCPW TD) ~~(VC Transportation Commission (VCTC)~~ released draft VMT thresholds that align with OPR's SB 743 Guidance and CEQA Guidelines. Using VMT as a performance metric instead of LOS is intended to discourage suburban sprawl, reduce greenhouse gas emissions, and encourage the development of smart growth, complete streets, and multimodal transportation networks. As such, VCPW TD ~~VCTC~~ is proposing to adopt OPR guidance that suggests the minimum reduction standard threshold for residential, office and industrial projects be 15% below the existing per capita VMT.[9]

9: Ventura County Public Works. 2021. Available at: https://s29422.pcdn.co/wp-content/uploads/2020/06/VMT-Draft-for-Public-Review-Clean-Version.pdf

The fourth paragraph on page 3.15-28 is revised as follows:

For land use projects, the intent of this threshold is to assess whether a land use or plan causes substantial vehicle miles traveled. The Plan would have a significant impact if the Plan's VMT exceeds the threshold. OPR issued proposed updates to the CEQA guidelines in November 2017 and an accompanying technical advisory guidance finalized in December 2018 (*OPR Technical Advisory*) that amends the Appendix G question for transportation impacts to delete reference to vehicle delay and level of service and instead refer to Section 15064.3, subdivision (b)(1) of the CEQA Guidelines asking if the project will result in a substantial increase in vehicle miles traveled (VMT). The California Natural Resources Agency certified and adopted the CEQA Guidelines in December of 2018 and are now in effect. In the absence of any formal guidelines and data from the City of Moorpark, VCPW TD ~~VCTC~~, or SCAG, this analysis summarizes an approach that is consistent with OPR Guidance for implementing SB 743.

Section 3.17, Utilities

The last paragraph on page 3.17-11 is revised as follows:

> Additional details regarding District, CMWD, and MWD planned water supply programs are provided in the District's 2015 UWMP, which was adopted in 2016.

The third paragraph on page 3.17-12 is revised as follows:

> Anticipated project specific water demands are provided in **Table 3.17-2~~3.14-2~~, Estimated Water Demands**. As indicated in **Table 3.17-2~~3.14-2~~**, potable water demand at buildout would be approximately 286.4 afy while recycled water demand at buildout would be about 105.7 afy for an overall demand of approximately 392.1 afy.

The first paragraph on page 3.17-13 is revised as follows:

> That determination is consistent with the analysis provided in the District's 2015~~2016~~ UWMP. Consequently, impacts under normal year conditions are considered to be less than significant.

The last paragraph on page 3.17-14 is revised as follows:

> A summary of the District's projected 20-year water supplies for multi dry year conditions is provided in **Table 3.17-5, Multi Dry Year Supply and Demand Comparison**. The District's total projected single multi dry year water supplies available during the ensuing 20 years will meet the projected water demands associated with the Hitch Ranch Project and existing and other planned uses within the District's service area. That determination is consistent with the analysis provided in the District's 2015~~2016~~ UWMP. Consequently, impacts under multi dry year conditions are considered to be less than significant.

The first paragraph on page 3.17-15 is revised as follows:

> As indicated above, water demands for the Proposed Project were included in the water demand projections in the District's 2015~~2016~~ UWMP. As indicated in the VCWWD No. 1's UWMP, the District's total projected water supplies available over the next 20 years will meet the projected water demands associated with the Proposed Project and existing and other planned uses within the District's service area under most scenarios. Therefore, the impact of the Proposed Project on water supplies under normal year and multiple dry year scenarios would be less than significant. In addition, the amount of production relied upon in the

supply-demand analysis to meet future demands will necessitate an expansion of treatment facilities, with or without the Proposed Project. As such, the impact on the expansion of facilities would be less than significant as well.

The last paragraph on page 3.17-15 is revised as follows:

Water demands for the Proposed Project and cumulative development were included in the water demand projections in the District's 2015~~2016~~ UWMP. As indicated in the VCWWD No. 1's UWMP, the District's total projected water supplies available over the next 20 years will meet the projected water demands associated with the Proposed Project and existing and other planned uses within the District's service area under normal and dry year scenarios. Impacts under the single dry year scenario would be reduced to a less-than-significant level once the water conservation strategies are implemented and potential additional water sources are secured. Therefore, the impact of the Proposed Project and cumulative development on water supplies under all scenarios would be less than significant. The expansion of water treatment facilities, necessary to meet future demands, presents a potentially significant cumulative impact, as does the possibility of needing additional groundwater extraction facilities as demand increases in the future.

The Standard Conditions and Requirements on page 3.17-16 are revised as shown:

Standard Conditions and Requirements

- The applicant shall comply with the applicable provisions of Ventura County Waterworks District No. 1 standard procedures for obtaining domestic water and sewer services for applicant's projects within the District.
- Prior to the issuance of a building permit, the applicant shall provide Ventura County Waterworks District with:
    a. Water and sewer improvement plans in the required format.
    b. Hydraulic analysis by a registered Civil Engineer to determine the adequacy of the proposed and existing water and sewer lines.
    c. Copy of fire hydrant location approvals by Ventura County Fire Protection District.
    d. Copy of District Release and Receipt from Calleguas Municipal Water District.

e. Cost estimates for water and sewer improvements.

f. Plan check, construction inspection, capital improvement charge, sewer connection few and water meter charge.

g. Signed ~~Contract~~ Agreement to Install all improvements and a Surety Bond.

h. Recorded easements dedicated to the District for water and sewer facility improvements.

The discussion on page 3.17-17 is revised as follows:

- The MWWTP has a design capacity of 5.0 mgd and has a state discharge permit for 1.5 mgd. The current average flow is 2.1 mgd. The treatment plant is currently permitted to discharge directly into the Arroyo Simi. However, Ventura County Waterworks District No. 1 (District) has requested termination of its NPDES permit. It is expected that by the end of 2022, the Moorpark WWTP would no longer have the ability to discharge treated effluent to Arroyo Las Posas.

  To reduce dependence on imported water, the District is in the planning phases of the Moorpark Desalter Project. This multi-million-dollar project will include constructing production water wells in the shallow aquifer and extracting the brackish groundwater, which is high in salts and dissolved solids. Once extracted, this groundwater will be filtered through a membrane treatment process and disinfected, resulting in treated water which will meet State drinking water quality standards. The treated water will then be delivered to the District's water distribution system. The brine waste from the treatment process will then be discharged into the Calleguas Municipal Water District's Salinity Management Pipeline to be transported to the Pacific Ocean.

  (Ventura County Waterworks District No. 1 2020 Urban Water Management Plan, page 3.5. Available online at: https://www.vcpublicworks.org/wp-content/uploads/2021/03/DRAFT-VCWWD-No.-1-2020-Urban-Water-Management-Plan-Update.pdf)

The discussion on page 3.17-19 is revised as follows:

Further, the Moorpark Water Reclamation Facility ~~is in the process of constructing~~ constructed tertiary treatment system upgrades in the early 2000s. This ~~will~~ allowed the recycled water system to be operated with more flexibility and efficiency. This upgrade ~~will~~ works in

conjunction with the District's newly expanded recycled water distribution system.[6] Therefore, no significant project impacts are expected to occur.

Table 3.17-6 on page 3.17-19 is revised as shown:

Table 3.17-6
Proposed In-Tract Average Sewer Generation ~~Loads~~

	VCWW Sewer Criteria		Proposed Average Sewer Load		
Dwelling Type	Dwelling Density	Per Capita Sewer Load (gallons/day)	Dwelling Units	Sewer Load (Gallons/day)	~~Sewer Load (cfs)~~ AFY
Single family	3.5	115~~78~~	427	171,868~~116,571~~	192.5~~0.180~~
Multiple family	2.2	81~~78~~	328	58,450~~56,285~~	65.5~~0.087~~
	Total		755	230,317~~172,856~~	258.0~~0.267~~

Source: Encompass Consultant Group, December 2019

The Standard Conditions and Requirements on page 3.17-20 are revised as shown:

Standard Conditions and Requirements

- The applicant shall comply with the applicable provisions of Ventura County Waterworks District No. 1 standard procedures for obtaining domestic water and sewer services for applicant's projects within the District.

- Prior to the issuance of a building permit, the applicant shall provide Ventura County Waterworks District with:

  a. Water and sewer improvement plans in the required format.

  b. Hydraulic analysis by a registered Civil Engineer to determine the adequacy of the proposed and existing water and sewer lines.

  c. Copy of fire hydrant location approvals by Ventura County Fire Protection District.

  d. Copy of District Release and Receipt from Calleguas Municipal Water District.

  e. Cost estimates for water and sewer improvements.

  f. Plan check, construction inspection, capital improvement charge, sewer connection few and water meter charge.

g. Signed ~~Contract~~ Agreement to Install all improvements and a Surety Bond.

h. Recorded easements dedicated to the District for water and sewer facility improvements.

Section 3.18, Wildfire

Paragraph one on page 3.18-10 is revised as follows:

The Ventura County Fire Protection District (also known as Ventura County Fire Department) provides ~~contract~~ fire protection services to the City, including wildfire protection and suppression.

On page 3.18-16 following is revision is made:

~~*International Fire Code*~~

~~Created by the International Code Council, the International Fire Code (IFC) addresses a wide array of conditions hazardous to life and property, including fire, explosions, and hazardous materials handling or usage (although not a federal regulation, but rather the product of the International Code Council). The IFC places an emphasis on prescriptive and performance based approaches to fire prevention and fire protection systems. Updated every 3 years, the IFC uses a hazards classification system to determine the appropriate measures to be incorporated to protect life and property (often times these measures include construction standards and specialized equipment). The IFC uses a permit system (based on hazard classification) to ensure that required measures are instituted (International Code Council 2017).~~

~~*International Wildland–Urban Interface Code*~~

~~The International Wildland–Urban Interface Code is published by the International Code and is a model code addressing wildfire issues.~~

On page 3.18-17 the following revision is made:

California Health and Safety ~~Services~~ Code

Fire regulations for California are established in Sections 13000 et seq. of the California Health and Safety ~~Services~~ Code and include regulations for structural standards (similar to those identified in the California Building Code); fire protection and public notification systems; fire protection devices such as extinguishers and smoke alarms; standards for high-rise structures

and childcare facilities; and fire suppression training. ~~The State Fire Marshal is responsible for enforcement of these established regulations and building standards for all state-owned buildings, state-occupied buildings, and state institutions within California.~~

The last paragraph one on page 3.18-17 is revised as follows:

~~Public Resource Code Section 4291 requires a reduction of fire hazards around buildings located adjacent to a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands or land that is covered in flammable material. It is required to maintain a minimum 100 feet of vegetation management around all buildings and is the primary mechanism for conducting fire prevention activities on private property within CAL FIRE jurisdiction. Further, PRC 4291 requires the removal of dead or dying vegetative materials from the roof of a structure, and trees and shrubs must be trimmed from within 10 feet of the outlet of a chimney or stovepipe. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.~~

Government Code Section 51182 calls for defensible space clearance and other wildland fire safety practices for buildings.

Note: Changes to GC 51182 were made by AB 3074 (2019) requiring a 0-5 foot ember-resistant zone around buildings (new building starting Jan 1, 2023 and existing building starting Jan 1, 2024). AB 63(2021) also made some changes that are now in effect.

The full text of the Code can be accessed online here: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV&sectionNum=51182

The second paragraph one on page 3.18-17 is revised as follows:

California Fire Code

The ~~2016~~ 2022 California Fire Code (Title 24, Part 9 of the California Code of Regulations) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure

throughout California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and wildland-urban interface areas.

The last paragraph one on page 3.18-17 is revised as follows:

California Code of Regulations - Title 14 Natural Resources

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

State Fire Safe Regulations - The project is located within a Local Responsibility Area (LRA) Very High Fire Severity Zone (VHFSZ) and shall comply with the minimum standards of the California Code of Regulations, Title 14, Division 1.5, Chapter 7, Article 6, Subchapter 2, "SRA/VHFSZ Fire Safe Regulations" (CCR T-14 FSR), unless modified by more restrictive local ordinances and requirements.

The first paragraph on page 3.18-18 is revised as follows:

Senate Bill 1241

In 2012, Senate Bill 1241 added Section 66474.02 to Title 7 Division 2 of the California Government Code, commonly known as the Subdivision Map Act. SB 1260, passed in 2019, has updated Section 66474.02. The statute prohibits subdivision of parcels designated very high fire hazard, or that are in a State Responsibility Area, unless certain findings are made prior to approval of the tentative map. The statute requires that a city or county planning commission make three new findings regarding fire hazard safety before approving a subdivision proposal. The three findings are, in brief: (1) the design and location of the subdivision and its lots are consistent with defensible space regulations found in PRC Section 4290-91, (2) structural fire protection services will be available for the subdivision through a publicly funded entity, and (3) ingress and egress road standards for fire equipment are met per any applicable local ordinance and PRC Section 4290.

The first paragraph on page 3.18-18 is revised as follows:

California Emergency Services Act (AB 38)

AB 38, approved by the Governor on September 27, 2008, gave Cal EMA responsibility for overseeing and coordinating emergency preparedness, response, recovery, and homeland security activities in the state. The Governor's Office of Emergency Services (OES) mission statement is "Protect lives and property, build capabilities, and support our communities for a resilient California."

The second paragraph on page 3.18-20 is revised as follows:

Utility Wildfire Mitigation Plans (SB 901)

After record-breaking drought in California from 2011 to 2017, perfect wildfire conditions allowed faulty PG&E utility lines to spark devastating fires that would scorch over 4,000 square miles of land across the state. In response to the deadly season, the California Legislature developed SB 901 as the "centerpiece measure" in its attempt to rectify damages from the 2017 wildfires and prevent future wildfire disasters. SB 901, approved by the Governor on September 21, 2018, mandates all electric utilities to prepare and submit wildfire mitigation plans that describe the utilities' plan to prevent, combat, and respond to wildfires affecting their service territories. The California Public Utilities Commission (CPUC) will review and refine the plans before implementing and enforcing them

The last paragraph on page 3.18-20 is revised as follows:

~~*Forestry and Fire Prevention: Joint Prescribed Burning Operation (AB 2551)*~~

~~Approved in 2018, AB 2551 authorizes CAL Fire to collaborate with private landowners on controlled burns to reduce wildfire fuel. Mismanagement of the forests can lead to a build up of forest underbrush that serves as a perfect fuel for wildfires. By allowing small, non industrial landowners to choose to individually implement various fire prevention programs, such as prescribed burns, AB 2551 promotes good, local forest management in the state.~~

The first and second paragraphs on page 3.18-21 are revised as follows:

Price Gouging: State of Emergency (AB 1919)

AB 1919, approved by the Governor on September 21, 2018, was one of the bills introduced to deal with insurance issues relating to, or originating from, wildfire. The bill prohibits landlords from increasing rental housing rates by more than 10 percent in the wake of a designated emergency. For renters affected by wildfire, a substantial increase in housing rates could be devastating and has the potential to result in homelessness. By stabilizing rental rates, AB 1919 protects current and future renters from being charged unfair prices in the wake of a disaster.

Forest Resources: Fire Prevention Grant Fees (SB 1079)

SB 1079, approved by the Governor on September 28, 2020, builds from existing laws establishing grants to private entities, Native American tribes, and public agencies to assist in the implementation and administration of projects and programs relating to improving forest health and reducing GHG emissions. SB 1079 authorizes CAL Fire to make advance payments to grantees (such as fire safe councils, Native American tribe, or special district), which receive funds from the healthy forest and local fire-prevention grant programs.

The first paragraph on page 3.18-22 is revised as follows:

~~*County of Ventura General Plan*~~

~~As indicated above, implementation of the fire hazard reduction goals and policies set forth in the Ventura County General Plan is Policy 6.1 of the Moorpark General Plan Safety Element. Therefore, the following goals and policies from the Ventura County General Plan Hazards Element have been included. The Hazards Element of the Ventura County General Plan contains a Fire Hazards chapter. The Fire Hazards chapter focuses on the rural or wildland areas of the County. The goals and policies that apply to fire hazards and may be applicable the project are as follows.~~

~~**Goals**~~

~~1. Minimize the risk of loss of life injury, damage to structures, and economic and social dislocations resulting from fire hazards.~~

~~2. Ensure that development in high fire hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards.~~

~~**Policies**~~

~~1. All applicants for discretionary permits shall be required, as a condition of approval, to provide adequate water supply and access for fire protection and evacuation purposes.~~

~~2. All discretionary permits in fire hazard areas shall be conditioned to include fire resistant vegetation, cleared firebreaks, or a long-term comprehensive fuel management program as a condition of approval. Fire hazard reduction measures shall be incorporated into the design of any project in a fire hazard area.~~

~~3. New residential subdivisions shall provide not less than two means of access for emergency vehicles and resident evacuation. A deviation from this policy is only allowed when the proposed road conforms to the County Road Standards and when the County Fire Chief approves the proposed road.~~

~~4. All applicants for subdivisions, multi-unit residential complexes, and commercial and industrial complexes shall be required to obtain, prior to permit approval, certification from the Fire Protection District that adequate fire protection is available, or will be available prior to occupancy.~~

~~*Ventura County Municipal Code*~~

~~Per Section 5111, Ventura County Fire Code, the Ventura County Code of Ordinances adopts by reference the 2019 California Fire Code, portions of the 2018 International Fire Code, and portions of Title 19 of the California Code of Regulations, with additions, deletions, and amendments. A county, city, or county and city may establish more restrictive building standards reasonably necessary because of local, climatic, geological, or topographical conditions.~~

The third paragraph on page 3.18-26 is revised as follows:

The project would be required to comply with the ~~County's~~ City of Moorpark's development review process, including review for compliance with the Ventura County Fire Apparatus Access Code - Ordinance 29 as well as compliance with applicable emergency access standards that would facilitate emergency vehicle access during project construction and operation. Additionally, an adequate water supply and an approved paved access roadway shall be installed prior to any combustibles on site.

The fourth paragraph on page 3.18-26 is revised as follows:

> The Project Applicant would be required to design, construct, and maintain structures, roadways, and facilities to comply with applicable local, regional, state, and federal requirements related to emergency access. Drive aisles, turning radii, and all access points would be designed with adequate emergency access. The project would be required to provide fire apparatus turnarounds on all dead-end fire apparatus access roadways over 150 feet in length~~, although the Fire Code Official is authorized to increase the length of a dead-end fire apparatus access roadway to a length of 250 feet, and provide a 40-foot horizontal turning radius of a fire apparatus access road, measured at the center line of the access road. All access roadways designed for one-way traffic shall have an unobstructed width of not less than 20 feet; all access roadways designed for two-way traffic shall have an unobstructed width of not less than 24 feet. Fire access roadways designed to allow parking shall provide a minimum clear width of not less than 32 feet for parking on one side and a clear width of not less than 36 feet for parking on both sides. All fire access roadways would have a vertical clearance of not less than 13 feet 6 inches for the full road width to allow access for fire apparatus. The proposed site plan is subject to approval by the County and the VCFD. Further, the project would be required to provide walking access to the rear of buildings, and ladder access for any windows facing the rear of the buildings.~~

The first paragraph on page 3.18-27 is revised as follows:

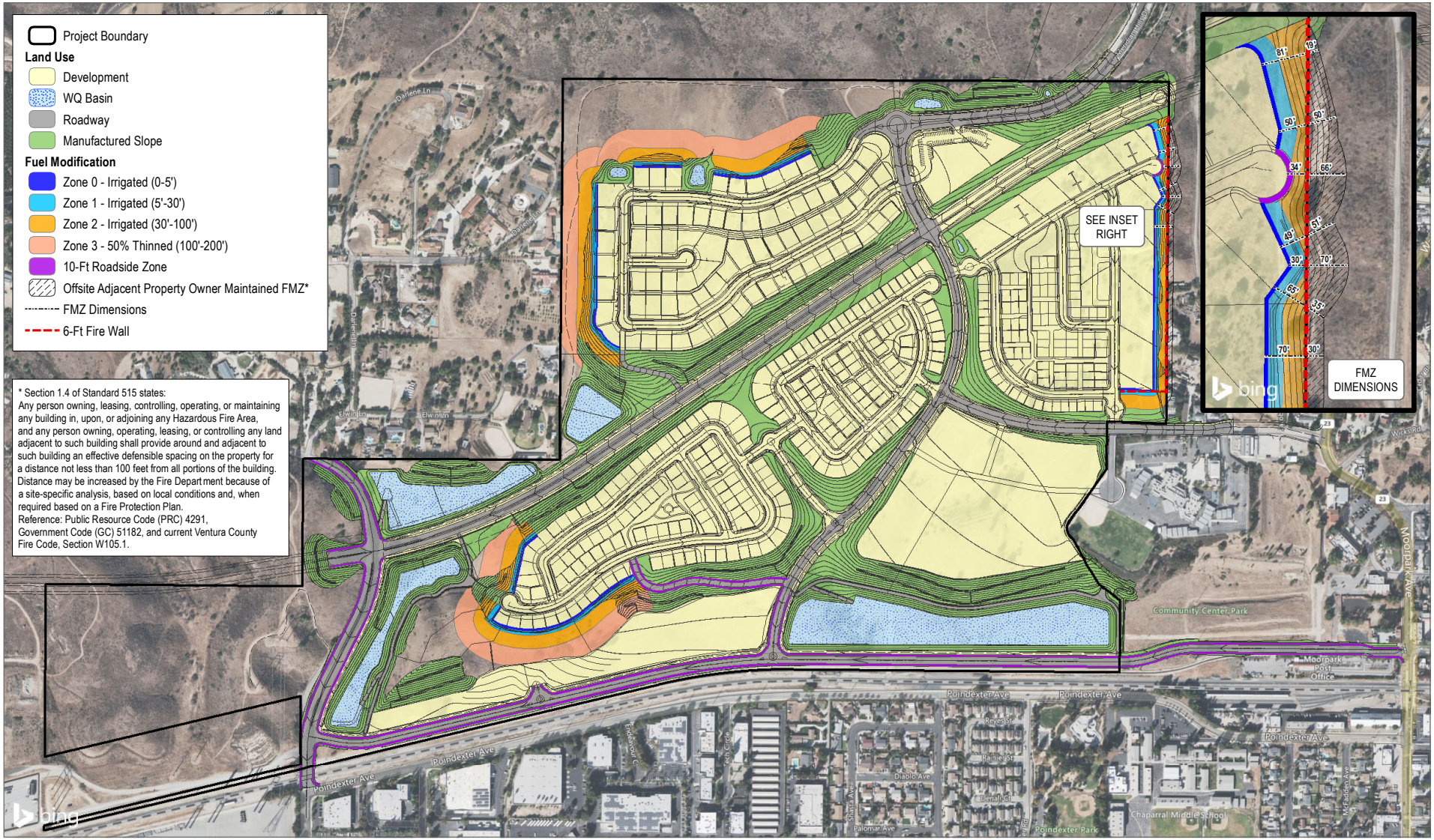
> The City of Moorpark, ~~the County of Ventura,~~ and the VCFD will review proposed modifications to existing roadways to ensure that adequate emergency access or emergency response would be maintained. Additionally, emergency response procedures would be coordinated through the County in coordination with the police and fire departments. Adherence to these requirements would ensure that that the project would not result in inadequate emergency access. No mitigation is required, and impacts would be less than significant.

The second paragraph on page 3.18-30 is revised as follows:

> As required by the Fire Code, a FMZ is a strip of land where combustible vegetation has been removed and/or modified and partially or totally replaced with more adequately spaced, drought-tolerant, fire resistant plants in order to provide a reasonable level of protection to structures from wildland fire. Per VCFD standards (Standards 515 and 517), which are consistent with the 2019 California Fire Code (Section 4907 — Defensible Space), Government Code 51175 – 51189, and Public Resources Code 4291A, which require that fuel modification zones be provided around every building that is designed primarily for human habitation or use within a VHFHSZ.

Fuel modification consists of at least 100 feet, measured in a horizontal plane, from the exterior façade of all structures towards the undeveloped areas. A typical landscape/fuel modification installation per the County's Fire Code consists of a five-foot Zone 0 (0 to 5 feet around the structures), a 3025-foot-wide Zone 1A (5 to 30 feet from the structures and decks), and a 70-foot wide Zone 2B (30 to 100 feet from the structures and decks) for a total of 100 feet in width. An additional 100-foot wide thinning zone (Zone 3C) is required for the areas adjacent to natural-vegetated, open space areas (north of PA1). Per VCFD, the full 100-foot defensible space zone from project buildings is required by the VCFPD Ordinance 31. Any portion off-site will be the responsibility of that affected property owner. VCFD is proposing a development condition to have the Hitch Ranch Project be responsible for the potion of the 100-foot zone off-site until such time the affected off-site properties develop. ~~a FMZ is required around every building that is designed primarily for human habitation or use within a VHFHSZ. A typical landscape/fuel modification installation per the County's Fire Code consists of a 30-foot wide irrigated zone (Zone A) and a 70-foot wide irrigated zone (Zone B) for a total of 100 feet in width on the periphery of the Project site, beginning at the structure. An additional 100-foot wide thinning zone (Zone C) is required for the areas adjacent to natural-vegetated, open space areas, such as is found north of the Project site.~~

Page 3.18-31 – Figure 3.18-3, Conceptual Fuel modification Plan has been revised.



SOURCE: Dudek; Aerial Bing Mapping Service, 2018; Encompass Consultant Group, 2021.

FIGURE **3.18-3**

IMPACT SCIENCES

Conceptual Fuel Modification Plan

The second paragraph on page 3.18-32 is revised as follows:

> Further, in accordance with **Mitigation Measure WF-3**, project landscaping would be implemented according to the VCFD Fire Hazard Reduction Program Plant Reference Guide and the VCFD Prohibited Plant List identified in the mitigation measure (as recommended by the Hitch Ranch Fire Protection Plan, Appendix 3.18). All landscape and fuel modification plans are required to be submitted to VCFD for review and approval. This includes developer install landscaping and any landscape installed by individual property owners.

Table 3.18-4 on page 3.18-33 is revised as follows:

Fire Scenario	Flame Length (feet)	Spread Rate (mph)[1]	Fireline Intensity (Btu/ft./s)	Spotting Distance[2] (Miles)
Scenario 1: 5% slope, Summer, Onshore, Summer Winds (Post-Development)				
FMZ Zones ~~0A and B~~ (FM8)	1.8'	0.1	20	0.2
FMZ Zones 1 and 2 (Gr1)	1.9'	0.2	24	0.2
FMZ Zone ~~3~~C (Gr2)	7.2'	1.1	420	0.4
Scenario 2: 9% slope, Fall, Offshore Extreme Winds (Post-Development)				
FMZ Zones ~~0A and B~~ (FM8)	2.1' (3.0' & 3.0')	0.1 (0.2 & 0.2)	29 (63 & 63)	0.2 (0.4 & 0.5)
FMZ Zone 1 and 2	4.0' (4.0' & 4.0')	0.7 (0.7 & 0.7)	115 (115 & 115)	0.2 (0.5 & 0.6)
FMZ Zone ~~3~~C (Gr2)	10.9' (18.0' & 18.0')	2.1 (6.2 & 6.2)	1,012 (3,037 & 3,037)	0.5 (1.3 & 1.6)
Scenario 3: 5% slope, Fall, Offshore, Extreme Winds (Post-Development)				
FMZ Zones ~~0A and B~~ (FM8)	2.1' (3.0' & 3.0')	0.1 (0.2 & 0.2)	29 (63 & 63)	0.2 (0.4 & 0.5)
FMZ Zone 1 and 2	4.0' (4.0' & 4.0')	0.7 (0.7 & 0.7)	115 (115 & 115)	0.2 (0.5 & 0.6)
FMZ Zone ~~3~~C (Gr2)	10.9' (18.0' & 18.0)	2.1 (6.2 & 6.2)	1,018 (3,037 & 3,037)	0.5 (1.3 & 1.5)

Note:
[1] mph = miles per hour
[2] Spotting distance from a wind driven surface fire.
[3] It should be noted that the wind mph in parenthesis represent peak gusts of 50 mph and 70 mph, respectively.

The first paragraph on page 3.18-39 is revised as follows:

> The Project would involve construction of access roads by extending existing roads into the Project site, as well as an internal circulation network. The on-site roadway network would be integrated into the broader roadway network in the Project area. The presence of increased human activity and vehicles along newly installed roads would introduce new potential ignition sources to the Project area. However, vegetation management would be required along roadways within the Very High FHSZ for roads internal and external to the Project site. On-site roads would be constructed to current Ventura County Fire Apparatus Access Code standards (Ordinance Number 29) and 2019 CFC (or then current edition), ~~including~~ all fire access

~~roadways designed for one-way traffic shall have an unobstructed width of not less than 20 feet; all-access~~ roadways designed for two-way traffic shall have an unobstructed width of not less than 24 feet. Fire access roadways designed to allow parking shall provide a minimum clear width of not less than 32 feet for parking on one side and a clear width of not less than 36 feet for parking on both sides and shall be improved with asphalt paving materials that support the imposed loads of fire apparatus (not less than twenty-tons or 80,000 lbs. after a 10-year storm). Turning radius for fire apparatus access roads will be a 50 foot inside radius per CCR T-14 FSR. ~~40 feet as measured at the center line of the access road.~~

The first paragraph on page 3.18-40 is revised as follows:

Roadside fuel modification consists of mowing grasses to ~~6~~3-inches in height and/or maintaining ornamental landscapes, including trees, clear of dead and dying plant materials (VCFD Standard). Roadside fuel modification would be maintained by the HOA. Therefore, installation and maintenance of site access roads in accordance with all relevant development codes would not exacerbate wildfire risk and would improve emergency access to the site and surrounding areas.

The second paragraph on page 3.18-45 is revised as follows:

Furthermore, other cumulatively considerable projects would be required to comply with the County's vegetation clearance requirements~~, as outlined in the County Municipal Code~~. The Ventura County Fire and Building Codes, along with project-specific needs assessments and fire prevention plan requirements, ensure that every project approved for construction includes adequate emergency access. Roads for all proposed projects are required to meet minimum widths, have all-weather surface, and be capable of supporting the imposed loads of responding emergency apparatus. The Hitch Ranch project and all other future development projects in the service area would be subject to discretionary review by the VCFD and would be required to comply with the County Fire Code and other relevant County Code requirements and other applicable local codes ~~(e.g., City of Moorpark Fire Code)~~ and regulations related to fire safety, building construction, access, fire flow, and fuel modification. Therefore, because all projects are required to comply with these requirements, cumulative impacts related to increased wildfire hazards and emergency response and access would be less than significant.

The second bullet on page 3.18-46 is revised as follows:

- The project design incorporates the establishment and maintenance of up to 200 feet of Zone 0~~A~~, Zone 1~~B~~, Zone 2, and Zone 3~~C~~ fuel modification zones (FMZs) for the Project site. The

FMZs will consist of irrigated and maintained landscapes that will be subject to regular "disturbance" in the form of maintenance and will not be allowed to accumulate excessive biomass over time, which results in reduced fire ignition, spread rates, and intensity.

The second bullet of mitigation measure WF-2 on page 3.18-48 is revised as follows:

- Provide a noncombustible, 6-foot high concrete masonry unit (CMU) wall at the top of the manufactured slopes behind the units within PA3 along the eastern property boundary. These walls will be installed to function as heat-deflecting walls; vining plants will be established as landscape screening. Note: the use of vining plants may be restricted in FMZ Zones 0, 1, and 2.

Mitigation Measure WF-3 on page 3.18-48 is revised as follows:

WF-3: A fully irrigated landscape, planted with drought-tolerant, fire-resistive plants shall be implemented ~~in accordance with VCFD Fire Hazard Reduction Program Plant Reference Guide (Appendix D of Appendix 3.18 of this EIR). No undesirable, highly flammable plant species shall be planted, as listed in the VCFD Prohibited Plant List (Appendix E of Appendix 3.18 of this EIR)~~. All landscape and fuel modification plans are required to be submitted to the City of Moorpark Community Development Department and the Ventura County Fire Department for review and approval. This includes developer installed landscaping and any landscape installed by individual property owners. The landscaping shall be routinely maintained and shall be watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would minimize ignition by embers from a wildfire.

Timing/Implementation: Prior to issuance of building permits

Enforcement/Monitoring: Ventura County Fire Department, City of Moorpark Community Development Department

Mitigation Measure WF-4 on page 3.18-48 is revised as follows:

WF-4: The project HOA shall ~~hire a qualified~~ coordinate with the Ventura County Fire Department ~~approved third party fuel modification zone inspector~~ to provide annual inspections. A copy of each inspection report ~~should~~ shall be provided to the City of Moorpark Community Development Director.

Timing/Implementation: Annually, following project occupancy.

Enforcement/Monitoring: Ventura County Fire Department, City of Moorpark Community Development Department

Appendix 3.18, Fire Protection Plan

A redline/strikeout copy and a clean version of the revised **Fire Protection Plan** are provided as Appendix B.1 and Appendix B.2, respectively, to this Final EIR.

City of Moorpark, California

Community Development Department
799 Moorpark Avenue, Moorpark, CA 93021

Project Name: **Hitch Ranch Specific Plan**

File Number: **Specific Plan No. 1 - SP 2019-01**

MITIGATION MONITORING AND REPORTING PROGRAM

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared in conformance with Section 21081.6 of the California Environmental Quality Act (CEQA) and Section 15097 of the CEQA Guidelines. This document has been developed to ensure implementation of mitigation measures and proper and adequate monitoring/reporting of such implementation. CEQA requires that this MMRP be adopted in conjunction with project approval, which relies upon a Mitigated Negative Declaration.

The purpose of this MMRP is to: (1) document implementation of required mitigation; (2) identify monitoring/reporting responsibility, be it the lead agency (City of Petaluma), other agency (responsible or trustee agency), or a private entity (applicant, contractor, or project manager); (3) establish the frequency and duration of monitoring/reporting; (4) provide a record of the monitoring/reporting; and (5) ensure compliance.

The following table lists each of the mitigation measures adopted by the City in conjunction with project approval, the implementation action, timeframe to which the measure applies, the monitoring/reporting responsibility, reporting requirements, and the status of compliance with the mitigation measure.

Implementation

The responsibilities of implementation include review and approval by City staff including the Engineering, Community Development, and Building divisions. Responsibilities include the following:

1. The applicant shall obtain all required surveys and studies and provide a copy to the City prior to issuance of grading permits or approvals of improvements plans.
2. The applicant shall obtain all required permits, agreements, and approvals from State and Federal regulatory agencies, as applicable and provide copies to the City prior to issuance of grading permits or approvals of improvements plans.
3. The applicant shall incorporate all applicable code provisions and required mitigation measures and conditions into the design and improvement plans and specifications for the project.

4. The applicant shall notify all employees, contractors, subcontractor, and agents involved in the project implementation of mitigation measures and conditions applicable to the project and shall ensure compliance with such measures and conditions.
5. The applicant shall provide for the cost of monitoring of any condition or mitigation measure that involves on-going operations on the site or long-range improvements.
6. The applicant shall designate a project manager with authority to implement all mitigation measures and conditions of approval and provide name, address, and phone numbers to the City prior to issuance of any grading permits and signed by the contractor responsible for construction.
7. Mitigation measures required during construction shall be listed as conditions on the building or grading permits and signed by the contractor responsible for construction.
8. All mitigation measures shall be incorporated as conditions of project approval.
9. The applicant shall arrange a pre-construction conference with the construction contractor, City staff and responsible agencies to review the mitigation measures and conditions of approval prior to the issuance of grading and building permits.

Monitoring and Reporting

The responsibilities of monitoring and reporting include the engineering, planning, and building divisions, as well as the fire department. Responsibilities include the following:

1. The Building, Community Development, and Engineering Departments and Fire Department shall review the improvement and construction plans for conformance with the approved project description and all applicable codes, conditions, mitigation measures, and permit requirements prior to approval of a site design review, improvement plans, grading plans, or building permits.
2. The Community Development Department shall ensure that the applicant has obtained applicable required permits from all responsible agencies and that the plans and specifications conform to the permit requirements prior to the issuance of grading or building permits.
3. Prior to acceptance of improvements or issuance of a Certificate of Occupancy, all improvements shall be subject to inspection by City staff for compliance with the project description, permit conditions, and approved development or improvement plans.
4. City inspectors shall ensure that construction activities occur in a manner that is consistent with the approved plans and conditions of approval.

MMRP Checklist

The following table lists each of the mitigation measures adopted by the City in connection with project approval, the timeframe to which the measure applies, the person/agency/permit responsible for implementing the measure, and the status of compliance with the mitigation measure.

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURE	IMPLEMENTATION/ TIMING	RESPONSIBLE PARTY	COMPLETION OF IMPLEMENTATION	
			ACTIVITY	DATE COMPLETED
AESTHETICS				
AES-1: To help minimize the short-term visual effects of mass grading, all manufactured slopes shall be hydro-mulched in conjunction with the grading process to prevent soil erosion and provide an environment conducive to plant growth. The seed mix used in the hydro-mulch slurry shall consist of a blend of fast-growing annual grasses and summer flowering forbs.	• Incorporate into project design and construction documents • During grading activities	• Community Development Department • Public Works Department • Parks, Recreation & Community Services Department		
AES-2: To minimize the change in the visual character of the site landscape screens must be placed around detention and debris basins in Planning Area 1, and below Planning Area 4 to limit views of these areas. These plantings must emphasize native species and shall comply with the City's Landscape Guidelines. At maturity, the landscaping shall be of a sufficient size to screen the detention basins.	• Incorporate into project design • Prior to grading permit issuance	• Community Development Department		
AES-3: Prior to issuance of a building permit, a lighting plan prepared by a lighting consultant shall be submitted to the City of Moorpark Department of Community Development for review and approval by the Community Development Director. The lighting plan shall incorporate 0.5 foot-candle as a threshold for spill and the minimum streetlamp glare level of 2.0 foot-candles. All fixtures shall utilize shields to direct light downward, and the lighting plan shall also incorporate other "dark sky" friendly measures to the extent feasible. Such measures may include, but are not limited to, the following or other comparable measures: • Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. • Restrict the operation of outdoor lighting for construction and operation activities to the hours of 7:00 a.m. to 10:00 p.m.	• Incorporate into project design and construction documents • Prior to grading permit issuance	• Community Development Department		

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURE	IMPLEMENTATION/ TIMING	RESPONSIBLE PARTY	COMPLETION OF IMPLEMENTATION	
			ACTIVITY	DATE COMPLETED
• Use high pressure sodium and/or cut-off fixtures instead of typical mercury-vapor fixtures for outdoor lighting. • Use unidirectional lighting to avoid light trespass onto adjacent properties. • Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses. • Provide structural and/or vegetative screening from light-sensitive uses. • Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses. • Architectural lighting shall be directed onto the building surfaces and have low reflectivity to minimize glare and limit light onto adjacent properties.				
AES-4: When installed, all street lighting fixtures shall be tested and adjusted to ensure that light levels do not exceed 2.0 foot-candles of glare and 0.5 foot-candle of spill at the project boundaries. Testing of street lighting fixtures shall be conducted by factory-trained and -employed technicians only, contracted for by the master developer and subject to the approval of the Community Development Director.	• Incorporate into project design and construction documents • Following street lighting installation	• Community Development Department		
AIR QUALITY				
CM AQ-1: The following control measures provided in the VCAPCD Air Quality Assessment Guidelines to minimize the generation of fugitive dust (PM10 and PM2.5), ROC, and NO_X during construction activities shall be implemented during construction of the proposed project: • The area disturbed by clearing, grading, earth moving, or excavation operations shall be minimized to prevent excessive amounts of dust. • Pre-grading/excavation activities shall include watering the areas to be graded or excavated before grading or excavation operations commences. Application of water (preferably reclaimed, if available)	• Incorporate into project design and construction documents • During construction activities	• Community Development Department • Public Works Department		

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURE	IMPLEMENTATION/ TIMING	RESPONSIBLE PARTY	COMPLETION OF IMPLEMENTATION	
			ACTIVITY	DATE COMPLETED
should penetrate sufficiently to minimize fugitive dust during grading activities. • Fugitive dust produced during grading excavation and construction activities shall be controlled by the following activities: • All graded and excavated material, exposed soil areas, and active portions of the construction site, including unpaved on-site roadways, shall be treated to prevent fugitive dust. Treatment shall include, but not necessarily be limited to, periodic watering, application of environmentally safe soil stabilization material, and/or roll-compaction as appropriate. Watering shall be done as often as necessary and reclaimed water shall be used whenever possible. • Graded and/or excavated inactive areas of the construction site shall be monitored at least weekly for dust stabilization. Soil stabilization methods, such as water and roll compaction, and environmentally safe dust control materials, shall be periodically applied to portions of the construction site that are inactive for over four days. If no further grading or excavation operations are planned for the area, the area should be seeded and watered until grass growth is evident, or periodically treated with environmentally safe dust suppressants to prevent excessive fugitive dust. • Signs limiting traffic to 15 miles per hour or less shall be posted on site. • During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties), all clearing, grading, earth moving, and excavation operations shall be curtailed to the degree necessary to prevent fugitive dust created by on-site activities and operations from being a nuisance or hazard, either off site or on site. The site superintendent/supervisor shall use				

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM				
MITIGATION MEASURE	**IMPLEMENTATION/ TIMING**	**RESPONSIBLE PARTY**	**COMPLETION OF IMPLEMENTATION**	
			ACTIVITY	**DATE COMPLETED**
discretion in conjunction with the VCAPCD in determining when winds are excessive. • Adjacent streets and roads shall be swept at least once per day, preferably at the end of the day if visible soil material is carried over to adjacent streets and roads. • Personnel involved in grading operations, including contractors and subcontractors, should be advised to wear respiratory protection in accordance with California Division of Occupational Safety and Health regulations. • During the construction phase, signs shall be posted on site and viewable to the public with the VCAPCD Complaints Hotline phone number 805-303-3700				
CM AQ-2: During construction contractors shall comply with the following measures to reduce NO_x and ROC from heavy equipment as recommended by the VCAPCD in its *Ventura County Air Quality Assessment Guidelines*: • Minimize equipment idling time to no more than 5 minutes, as required in Title 13, CCR §2485, §2449(d)(2), respectively. The idling limit does not apply to: (1) idling when queuing; (2) idling to verify that the vehicle is in safe operating condition; (3) idling for testing, servicing, repairing or diagnostic purposes; (4) idling necessary to accomplish work for which the vehicle was designed (such as operating a crane); (5) idling required to bring the machine system to operating temperature, and (6) idling necessary to ensure safe operation of the vehicle. • Maintain equipment engines in good condition and in proper tune as per manufacturer's specifications. • Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.	• Incorporate into project design and construction documents • During construction activities	• Community Development Department		

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURE	IMPLEMENTATION/ TIMING	RESPONSIBLE PARTY	COMPLETION OF IMPLEMENTATION	
			ACTIVITY	DATE COMPLETED
• Use alternatively fueled construction equipment, such as compressed natural gas (CNG), liquefied natural gas (LNG), or electric, if feasible.				
MM AQ-1: During heavy grading, construction contractors shall comply with the following measures to reduce potential Valley Fever impacts: • Hire crews from local populations where possible, since it is more likely that they have been previously exposed to the fungus and are therefore immune. • Require crews to use respirators during project clearing, grading, and excavation operations in accordance with California Division of Occupational Safety and Health regulations. • Require that the cabs of grading and construction equipment be air-conditioned or enclosed with sufficient ventilation and particulate matter filtration systems. • Require crews to work upwind from excavation sites where possible. • Where acceptable to the fire department, control weed growth by mowing instead of disking, thereby leaving the ground undisturbed and with a mulch covering. • During rough grading and construction, the access way into the Project site from adjoining paved roadways should be paved or treated with environmentally safe dust control agents. Implementation of VCAPCD CM-AQ-1 (above), control measures provided in the VCAPCD Air Quality Assessment Guidelines will also serve to minimize the generation of fugitive dust (PM10 and PM2.5).	• Incorporate into project design and construction documents • Prior to issuance of building permits	• Community Development Department • Public Works Department		
MM AQ-2: For the entire duration of construction period, all off-road equipment greater than 25 horsepower shall have engines rated by the United States Environmental Protection Agency as complying with Tier 4 final emission limits. The construction contractors shall provide quarterly summaries of compliance with this measure to the City.	• Incorporate into project design and construction documents	• Community Development Department		

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM				
MITIGATION MEASURE	**IMPLEMENTATION/ TIMING**	**RESPONSIBLE PARTY**	**COMPLETION OF IMPLEMENTATION**	
			ACTIVITY	**DATE COMPLETED**
	• Prior to issuance of building permits			
MM AQ-3: The Project Applicant shall submit payment of fees to the City of Moorpark's Transportation System Management Fund (Resolution No. 2006-2461). The fees shall be calculated using the procedure outlined in Resolution No. 2006-2461, which relies on the recommendation of the VCAPCD Air Quality Assessment Guidelines. As such, the fees shall be based on the unit cost for ROC in effect at the time the fee is to be paid using the Ventura County Air Quality Assessment Guidelines formula of: (14 lbs excess mobile source ROC emissions) x (unit cost of ROG) x (365 days of operation) x (3 years) = total cost The unit cost of ROG shall be calculated by adjusting the year 2000 unit cost of $5.18 per pound of ROC reduced with an inflation factor calculated by dividing the most recent January Consumer Price Index (All Urban Consumers [All Items 1982-1984=100]) value for the Los Angeles area by the January 2000 Consumer Price Index value for this region of 167.9. The City of Moorpark shall spend or commit the mitigation fees to a mitigation project within five years of receipt of the funds. The funds shall be prioritized for mitigation projects within Moorpark, or if not feasible to be located within Moorpark, shall be used for mitigation projects in other locations within Ventura County. The mitigation funds shall not be used for traffic engineering projects, including but not limited to signal synchronization, intersection improvements, or channelization. The City shall provide a report to the City Council annually on the collection, expenditure, and use of these mitigation fees. Each future entitlement, including but not limited to subdivision maps, planned development permits, and conditional use permits, related to the Proposed Project may be conditioned to pay its proportionate share of the cost to reduce ROC emissions.	• Incorporate into project design and construction documents • Prior to the issuance of first Certificate of Occupancy for each future entitlement, including but not limited to subdivision maps, planned development permits, and conditional use permits, related to the Proposed Project.	• Community Development Department		

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURE	IMPLEMENTATION/ TIMING	RESPONSIBLE PARTY	COMPLETION OF IMPLEMENTATION	
			ACTIVITY	DATE COMPLETED
BIOLOGICAL RESOURCES				
BR-1: The applicant shall retain a qualified biologist with a California Department of Fish and Wildlife (CDFW) Scientific Collection Permit and Memorandum of Understanding to conduct preconstruction surveys for the western spadefoot, coastal western whiptail, coast horned lizard, and coast patch-nose snake in areas that would be disturbed within the project site. All western spadefoot, coastal western whiptail, coast horned lizard, and coast patch-nose snake observed within the project site during preconstruction surveys must be relocated, at the approval of the City and CDFW, to an approved site with suitable habitat for these species. Surveys and relocation of spadefoots, lizards, and snakes may occur prior to construction; however, focused surveys must occur within 30 days prior to construction initiation to ensure that no special-status reptiles or amphibians are present within the project site during construction. Survey methods and relocation areas must be reviewed and approved by the CDFW prior to commencement of grading.	• Incorporate into project design and construction documents • Implement within 30 days prior to grading activities	• Community Development Department		
BR-2: Within thirty days prior to construction activities, a qualified biologist shall conduct CDFW protocol surveys to determine whether the burrowing owl is present at the site. The surveys shall consist of up to three site visits and shall be conducted in areas dominated by field crops, disturbed habitat, grasslands, and along levee locations, if such habitats occur within 500 feet of a construction zone. If located, occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFW verifies through non-invasive methods that either the birds have not begun egg-laying and incubation or that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If a burrowing owl is detected but nesting is not occurring, construction work can proceed after any owls have been evacuated from the site using CDFW-approved passive relocation and burrow closure procedures and after alternative nest sites have been provided in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (10-17-95).	• Incorporate into project design and construction documents • Implement within 30 days prior to grading activities	• Community Development Department		

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM

MITIGATION MEASURE	IMPLEMENTATION/ TIMING	RESPONSIBLE PARTY	COMPLETION OF IMPLEMENTATION	
			ACTIVITY	DATE COMPLETED
Unless otherwise authorized by CDFW, a 500-foot buffer, within which no activity will be permissible, will be maintained between project activities and nesting burrowing owls during the nesting season. The buffer area may be reduced if there is no evidence of indirect impairment to owls based on direct observations by a monitoring biologist. The protected area will remain in effect until August 31 or at CDFW's discretion and based upon monitoring evidence, until the young owls are foraging independently.				
BR-3: Within thirty days prior to construction activities in grassland and scrub vegetation a qualified biologist shall conduct a survey within the proposed construction disturbance zone and within 200 feet of the disturbance zone for San Diego black-tailed jackrabbit and San Diego desert woodrat. If San Diego black-tailed jackrabbits are present, non-breeding rabbits shall be flushed from areas to be disturbed. Dens, depressions, nests, or burrows occupied by pups shall be flagged and ground-disturbing activities avoided within a minimum of 200 feet during the pup-rearing season (February 15 through July 1). This buffer may be reduced based on the location of the den upon consultation with CDFW. Occupied maternity dens, depressions, nests, or burrows shall be flagged for avoidance, and a biological monitor shall be present during construction. If unattended young are discovered, they shall be relocated to suitable habitat by a qualified biologist. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits. If active San Diego desert woodrat nests (stick houses) are identified within the disturbance zone or within 100 feet of the disturbance zone, a fence shall be erected around the nest site adequate to provide the woodrat sufficient foraging habitat at the discretion of the qualified biologist in consultation with CDFW. If young are present, clearing and construction within the fenced area will be postponed or halted until young have left the nest. The biologist shall serve as a construction monitor during those periods when disturbance activities will occur near active nest areas to ensure that no inadvertent	• Incorporate into project design and construction documents • Implement within 30 days prior to grading activities	• Community Development Department •		

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM				
MITIGATION MEASURE	**IMPLEMENTATION/ TIMING**	**RESPONSIBLE PARTY**	**COMPLETION OF IMPLEMENTATION**	
			ACTIVITY	**DATE COMPLETED**
impacts to these nests will occur. If avoidance is not possible, the applicant will take the following sequential steps: 1. All understory vegetation will be cleared in the area immediately surrounding active nests followed by a period of one night without further disturbance to allow woodrats to vacate the nest; 2. each occupied nest will then be disturbed by a qualified wildlife biologist until all woodrats leave the nest and seek refuge off site; and 3. the nest sticks shall be removed from the Project site and piled at the base of a nearby hardwood tree (preferably a coast live oak or California walnut). Relocated nests shall not be spaced closer than 100 feet apart, unless a qualified wildlife biologist has determined that a specific habitat can support a higher density of nests. The applicant shall document all woodrat nests moved and provide a written report to CDFW. All woodrat relocation shall be conducted by a qualified biologist in possession of a scientific collecting permit.				
BR-4: Within thirty days prior to construction activities in grassland, scrub, chaparral, oak woodland, riverbank, and agriculture habitats, or other suitable habitat a qualified biologist shall conduct a survey within the proposed construction disturbance zone and within 200 feet of the disturbance zone for American badger. If American badgers are present, occupied habitat shall be flagged and ground disturbing activities avoided within 50 feet of the occupied den. Maternity dens shall be avoided during the pup-rearing season (February 15 through July 1) and a minimum 200-foot buffer established. This buffer may be reduced based on the location of the den upon consultation with CDFW. Maternity dens shall be flagged for avoidance, identified on construction maps, and a qualified biologist shall be present during construction. If avoidance of a non-maternity den is not feasible, badgers shall be relocated either by trapping or by slowly	• Incorporate into project design and construction documents • Implement within 30 days prior to grading activities	• Community Development Department		

HITCH RANCH SPECIFIC PLAN MITIGATION MONITORING AND REPORTING PROGRAM

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excavating the burrow (either by hand or mechanized equipment under the direct supervision of the biologist, removing no more than 4 inches at a time) before or after the rearing season (February 15 through July 1). Any relocation of badgers shall occur only after consultation with CDFW. Collection and relocation of animals shall only occur with the proper scientific collection and handling permits.				
BR-5: Disturbed vegetation located on the east-side of Gabbert Road that includes California sagebrush-deerweed scrub, cactus scrub, and blue elderberry stands, which are unsuitable for CAGN nesting but used as foraging habitat, shall be replaced at a ratio of 1:1. Although no individuals or breeding territories have been observed within the undisturbed California sagebrush-deerweed scrub to the west of Gabbert Road, impacts to this vegetation shall be replaced at a 2:1 ratio due to its potential to support foraging and nesting CAGN. CAGN habitat shall be restored on-site. If a suitable on-site location is not feasible, restoration may occur at a mitigation bank, approved by USFWS prior to issuance of a grading permit or any ground disturbing activities on the Project site. If mitigation requirements cannot be met on-site and/or through the purchase of credits at a mitigation bank, a suitable off-site location may be identified and utilized subject to City and USFWS approval. Moreover, consultation with USFWS in accordance with FESA will occur prior to issuance of a grading permit or any ground disturbing activities and their recommendations followed. The applicant shall be responsible for obtaining all necessary regulatory agency permits for compliance with the FESA.	• Incorporate into project design and construction documents • Implement prior to issuance of a grading permit or any ground disturbing activities	• USFWS • Community Development Department		
BR-6: Sixty (60) days prior to scheduled site mobilization, the applicant shall submit a Native Habitat Restoration Plan for the restoration of a native habitat on the site to the satisfaction of the Community Development Director, CDFW, and USFWS, which shall be approved by the aforementioned prior to issuance of a building permit or ground disturbing activities at the Project site. At a minimum, the Restoration Plan shall identify all responsible parties/stakeholders, performance standards, success criteria, plant pallet and planting methods, irrigation details and watering schedule, maintenance	• Incorporate into project design and construction documents • Plan submittal 60 days prior to scheduled site mobilization. Prior to issuance of grading permits (review of	• Community Development Director		

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measures and schedule, monitoring and reporting requirements, contingencies, adaptive management strategies, and funding sources, such as an endowment for long-term management. Native vegetation on the Project site shall be incorporated in the plan at the ratios indicated below:	plan), prior to issuance of occupancy permits (site inspection)			

Plant Community	Replacement Ratio (area replaced : area impacted)
California sagebrush -deerweed scrub (west of Gabbert Rd)	2:1
California sagebrush -deerweed scrub (east of Gabbert Rd)	1:1
Blue elderberry stands (disturbed/grazed)	1:1
Cactus scrub	1:1

Source: Rincon Consultants, Inc., November 2021

Once approved, implementation of the Native Habitat Restoration Plan shall be required as a condition of approval of the Tract Map and RPD. The restoration shall be performed in accordance with current best available restoration practices and the applicant (or designee) shall be responsible for maintaining the restoration areas for a period of five years to ensure the successful establishment of the plantings, which shall be extended an additional three years if determined necessary by the Community Development Director. The applicant shall pay the costs for monitoring restoration of the Native Habitat for the full and complete restoration time period, which if extended shall require further payment. If a suitable on-site restoration is not feasible, restoration may occur at a mitigation bank, approved by CDFW and USFWS prior to issuance of a grading permit or any ground disturbing activities on the Project site. If restoration requirements cannot be met on-site and/or through the purchase of credits at a mitigation bank, a suitable off-site location may be identified and utilized. The off-site location and restoration Plan shall be

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reviewed and approved by the City prior to issuance of a grading permit and secured prior to any ground disturbing activities on the Project site.				
BR-7: All areas temporarily impacted by project grading and construction activities but within the fuel management zone must be revegetated with California native plant species, with densities and spacing consistent with the intent of maintaining fuel management zones as described in the City's Landscape Standards and Guidance and the Hitch Ranch Fire Protection Plan (refer to Appendix 3.18-A).	• Incorporate into project design and construction documents • Seeding shall occur within the fall/winter season immediately following the completion of grading and construction activities to maximize successful plant establishment.	• Community Development Department		
BR-8: In order to comply with city, state, and federal regulations regarding impacts to USACE, CDFW and RWQCB jurisdictional areas permitting must be executed pursuant to Sections 401 and 404 of the federal Clean Water Act and the California Fish and Game Code (Section 1602), for all impacts to WOTUS and streambeds. All conditions of the agreements with these agencies designed to minimize impacts to biological resources shall be implemented. Impacts associated with permanently disturbed areas within regulated waters would be mitigated in-kind at a minimum ratio of 1:1. Mitigation will be completed by providing adequate funding to a conservation bank for re-establishment, rehabilitation or enhancement. Mitigation lands should be located in the regional vicinity of the Project site or within the Calleguas Creek Watershed. Note: the final mitigation ratios required by regulatory agencies during the permitting process may differ from those identified above. The applicant shall be responsible for obtaining all necessary regulatory agency permits for compliance with the Clean Water Act and California Fish and Game Code.	• Incorporate into project design and construction documents • Prior to issuance of grading permits	• Community Development Department		

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BR-9: Within seven (7) days prior to construction or site preparation activities that would occur during the nesting/breeding season of native bird species potentially nesting on the site (typically January 15 through August 30 for raptors and February 15 through September 15 for migratory passerines), the applicant shall have a field survey conducted by a qualified biologist to determine if active nests of bird species protected by the Migratory Bird Treaty Act or the California Fish and Game Code are present in the construction zone or within 300 feet (500 feet for raptors or federally listed endangered or threatened bird species) of the construction zone. If active nests are found, all construction activities within the 300-500-foot buffer zones must be postponed or halted, until the biologist determines that the nest is vacated, juveniles have fledged, and there is no evidence of a second attempt at nesting. The biological monitor shall be able to adjust the size of the buffer zone dependent on the species involved (i.e., non-raptors and common species) and/or allow certain activities within the buffer zone if it can be shown that the activity will not interfere with nesting. The biologist shall serve as a construction monitor during those periods when construction activities would occur near active nest areas to ensure that no inadvertent impacts occur to these nests.	• Incorporate into project design and construction documents • No earlier than 7 days and no later than 5 days prior to construction or site preparation activities that would occur during the nesting/breeding season	• Community Development Department		
BR-10: A tree removal permit must be obtained from the City prior to removal of trees that meet the mature tree criteria within the City's tree ordinance (No. 101). Permits will not be issued until the project has been approved by the City. Removed trees that are determined to be diseased and/or infested with insect pests shall be chipped onsite to prevent the spread to offsite trees. The loss of trees shall be mitigated by using the appraised value of each removed tree and then applying the value towards upgrading the size of the tree plantings associated with the project. The proposed replacement tree species shall emphasize native species and must be consistent with the City's Landscape Standards and Guidelines to ensure that invasive species will not be used. In accordance with the Landscape Design Standards and Guidelines, 'enhanced landscaping' shall be installed that is equal to the value of the trees removed.	• Incorporate into project design and construction documents • Tree removal permit application and replacement plan submittal at least 30 days prior to scheduled site mobilization and grading	• Community Development Department • Parks, Recreation & Community Services Department		

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BR-11: Following construction, pets and other domestic animals must be prohibited from the remaining open space areas and from any revegetation areas on the Project site unless restrained by leash and accompanied at all times by the owner or responsible party. Fencing of sufficient height and design or acceptable landscaping must be constructed between the residential areas and natural areas to the north to discourage domestic animals from entering open space habitat areas. Human access into the open space areas may occur in designated areas along the perimeter of the habitats. Prohibitions against human and domestic animal use in sensitive habitat areas must be established by the Covenants, Conditions, and Restrictions (CC&Rs). A brochure must be prepared by the developer and distributed to all home buyers that explains the purpose and sensitivity of the mitigation area and reasons why residents and their pets are discouraged from using this area. Signage shall be provided at the entrance of trails that are nearby sensitive habitat areas to notify users of the nature of the area and it's sensitivity. The CC&Rs must also state that no structures shall be constructed within the open space areas. As determined by a qualified biologist, interpretative signs that explain the sensitivity of natural habitats and the need to minimize impacts on these adjacent areas are to be constructed and placed in appropriate areas. The project applicant shall be responsible for installation of interpretive signs (at 200-foot intervals) and fencing along the perimeter of the mitigation area.	• Incorporate into project design and construction documents • Prior to issuance of first occupancy permits	• Community Development Department		
BR-12: The landscaping plans within the project area (residential and common areas) shall be prepared by a licensed California landscape architect, and shall provide appropriate provisions to prohibit using invasive plant species, especially those listed by the California Invasive Plants Council (their website provides a current invasive plants list), to prevent those species from colonizing remaining natural areas. Landscaping plans shall be consistent with the City of Moorpark Municipal Code Section 15.23 Water Efficient Landscape Ordinance and Title 17, Zoning. These provisions may include the following: (a) review and screening of proposed plant palette and planting plans to identify and avoid	• Incorporate into project design and construction documents • Prior to landscaping plan approval	• Community Development Department • Parks, Recreation & Community Services Department		

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the use of invasive species; (b) weed removal during the initial planting of landscaped areas; and (c) the monitoring for and removal of weeds and other invasive plant species as part of ongoing landscape maintenance activities. The frequency and method of monitoring for invasive species shall be determined by the City of Moorpark Parks, Recreation and Community Services Department.				
BR-13: Prior to issuance of a grading permit, a lighting plan prepared by a lighting consultant consistent with the Specific Plan Design Guidelines Lighting Concept shall be submitted to the City of Moorpark Department of Community Development for review and approval by the Community Development Director. The lighting plan shall incorporate 0.5 foot candle as a threshold for spill and the minimum streetlamp glare level of 2.0 foot-candles. All fixtures shall utilize shields to direct light downward, and the lighting plan shall also incorporate other "dark sky" friendly measures to the extent feasible. Such measures may include, but are not limited to, the following or other comparable measures: • Use lighting fixtures that are adequately shielded to a point below the light bulb and reflector and that prevent unnecessary glare onto adjacent properties. • Restrict the operation of outdoor lighting for construction and operation activities to the hours of 7:00 a.m. to 10:00 p.m. • Use high pressure sodium and/or cut-off fixtures instead of typical mercury-vapor fixtures for outdoor lighting. • Use unidirectional lighting to avoid light trespass onto adjacent properties. • Design exterior lighting to confine illumination to the project site, and/or to areas which do not include light-sensitive uses. • Provide structural and/or vegetative screening from light-sensitive uses.	• Incorporate into project design and construction documents • Prior to grading permit issuance	• Community Development Department		

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• Shield and direct all new street and pedestrian lighting away from light-sensitive off-site uses. • Architectural lighting shall be directed onto the building surfaces and have low reflectivity to minimize glare and limit light onto adjacent properties.				
BR-14: When installed, all street lighting fixtures shall be tested and adjusted to ensure that light levels do not exceed 2.0 foot-candles of glare and 0.5 foot-candle of spill at the project boundaries. Testing of street lighting fixtures shall be conducted by factory-trained and -employed technicians only, contracted for by the master developer and subject to the approval of the Community Development Director.	• Incorporate into project design and construction documents • Following street lighting installation	• Community Development Department		
BR-15: A City-approved biologist must be retained by the applicant as a construction monitor to ensure that incidental construction impacts on retained biological resources are avoided or minimized. Responsibilities of the construction monitor include the following: • Attend all pre-grading meetings to ensure that the timing and location of construction activities do not conflict with mitigation requirements. • A pre-construction Worker Environmental Awareness Program (WEAP) training shall be conducted for all construction employees. Prior to the start of construction activities, the WEAP shall be presented to inform construction supervisors, workers, and inspectors of sensitive resources that have a moderate to high potential of occurrence on the Project site, to explain their importance and sensitivity, to review regulatory protections afforded to these resources, and to describe the project design features and mitigation measures adopted to avoid and reduce impacts. Training shall identify individual responsibilities regarding these resources, and communication procedures should sensitive resources exist or be found in the project area. Training participation shall be documented and kept as a log on site. Workers will receive a hard hat decal to show	• Incorporate into project design and construction documents • During grading and construction activities	• Community Development Department		

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completion and receive a reference resource (i.e., wallet card, brochure, etc.) for later review as needed. • Conduct meetings with the contractor and other key construction personnel, describing the importance of restricting work to within the project boundaries and outside of the preserved areas. The monitor shall also discuss staging/storage areas for construction equipment and materials. The biological monitor shall investigate all on-site storage areas to minimize impacts to biological resources. • Guide the contractor in marking/flagging the construction area, in accordance with the final approved grading plan. Any construction activity areas immediately adjacent to special-status plant populations or other special-status resources may be directed to be flagged or temporarily fenced at the discretion of the monitor. • Periodically and routinely visit the site during construction to coordinate and monitor compliance with the above provisions.				
BR-16: The construction contractor shall install temporary erosion control measures, if necessary, to reduce impacts to and protect off-site drainages from excess sedimentation, siltation, and erosion. These measures shall consist of minimization of existing vegetation removal; the use of temporary soil covers, such as hydroseeding, mulch/binder, and erosion-control blankets to protect exposed soil from wind and rain erosion; or the installation of silt fencing, coirs, berms, and dikes to protect storm drain inlets and drainages.	• Incorporate into project design and construction documents • During grading and construction activities	• Public Works Department		
BR-17: Refueling, changing of oil or other fluids, and vehicle maintenance may be allowed in designated areas located a minimum of 50 feet away from any drainages or proposed mitigation areas. The contractor shall be responsible for providing, and maintaining covered trash bins or dumpsters for any trash or other construction waste materials generated on the site during the project. Vehicles carrying supplies, such as concrete, may not empty, clean out, or otherwise place materials into any mitigation or opens space areas on or	• Incorporate into project design and construction documents • During grading and construction activities	• Public Works Department		

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immediately adjacent to the site. Any spills or trash on the site, whether accidental or not, must be cleaned up at the end of each working day.				
BR-18: Any equipment or vehicles driven or operated within or adjacent to drainages must be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life. (Vehicles and equipment shall not be left idling or operated beyond periods needed to accomplish approved tasks.)	• Incorporate into project design and construction documents • During grading and construction activities	• Public Works Department		
BR-19: Construction personnel are prohibited from entry into areas outside the designated construction area, except for necessary construction related activities, such as surveying. All such construction activities including access in or adjacent to remaining open space areas must be coordinated with the project biologist.	• Incorporate into project design and construction documents • During grading and construction activities	• Public Works Department		
BR-20: Standard dust-control measures of the Ventura County Air Pollution Control District must be implemented to reduce impacts to nearby plants and wildlife. This includes a variety of options to reduce dust including replacing ground cover in disturbed areas as quickly as possible, using tackifiers in watering trucks on active sites regularly, and suspending all excavating and grading operations during periods of high winds.	• Incorporate into project design and construction documents • During grading and construction activities	• Public Works Department		
BR-21: Upon completion of construction, the contractor shall be held responsible for scarifying and hydroseeding, using native plant seeds, on any haul roads, access roads, or staging areas that are outside of approved grading limits. This restoration must be done in consultation with the project biologist.	• Incorporate into project design and construction documents • Following grading and during construction activities	• Public Works Department		

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CULTURAL RESOURCES				
CUL-1: Due to the potential that archeological resources may be present on the Project site, the City of Moorpark shall require a note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources, including prehistoric Native American artifacts. Construction personnel associated with earth moving equipment, drilling, grading, and excavating, shall be provided with basic training conducted by a qualified archaeologist, to be retained and compensated by the development team, with the approval of the City of Moorpark. Issues that shall be included in the basic training will be geared toward training the applicable construction crews in the identification of archaeological deposits, further described below. Training will include written notification of the restrictions regarding disturbance and/or removal of any portion of archaeological deposits and the procedures to follow should a resource be identified. The construction contractor, or its designee, shall be responsible for implementation of this measure. A Native American monitor shall be provided an opportunity to attend the pre-construction briefing if requested. A Native American monitor from a consulting Tribe under AB 52 and a qualified archeologist, to be compensated by the development team, shall be available on an "on-call" basis during ground disturbing construction in native soil to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. If archaeological remains or tribal cultural resources are uncovered, all construction activities within a 100-foot radius shall be halted immediately until a qualified archaeologist, in consultation with the Native American monitor, shall evaluate whether the resource requires further study. The City shall require that the Applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. If any previously undiscovered resources are found during construction the City of Moorpark Community Development Department shall be contacted, and the resource shall be evaluated for significance in terms of CEQA criteria by a qualified archaeologist. Prehistoric archaeological site indicators include but	• Incorporate into project design and construction documents • During ground disturbing construction activities	• Community Development Department • Qualified archeologist retained by development team		

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are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include but are not limited to: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps). If City and the qualified archaeologist determine the resource to be significant under CEQA, they shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. Contingency funding and a time allotment sufficient for recovering an archeological sample or to employ an avoidance measure may be required. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a formal Archaeological Monitoring Plan (AMP) which will include a research design and archaeological data recovery plan for the resource. Development and implementation of the AMP will be determined by the City of Moorpark and treatment of any significant cultural resources shall be undertaken with the approval of the project applicant, and the City. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System [CHRIS]), and provide for the permanent curation of the recovered materials. The City of Moorpark and/or development team shall, in good faith, consult with the Fernandeño Tataviam Band of Mission Indians and consulting Tribes on the disposition and treatment of any recovered materials. A Monitoring Closure Report shall be filed with the City of Moorpark at the conclusion of ground disturbing construction if archaeological resources were encountered and/or recovered. After the find has been appropriately mitigated (as defined by State CEQA Guidelines Section 15126.4(b)), work in the area may resume.				

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CUL-2: If human remains or funerary objects are unearthed during any activities associated with the project, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur within a 100-foot buffer of the find until the County coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to notify the Native American Heritage Commission (NAHC), the Fernandeño Tataviam Band of Mission Indians, and consulting Tribes. The NAHC will then contact the deceased Native American's most likely descendant, who will then serve as consultant on how to proceed with the remains (i.e., avoid, rebury).	• Incorporate into project design and construction documents • During ground disturbing construction activities	• Community Development Department • Qualified archeologist retained by development team		
GEOLOGY AND SOILS				
GS-1: The applicant shall conduct additional geotechnical work, consisting of soil borings and laboratory analysis, within the areas of the structures to better define the severity of liquefaction, settlement, and expansiveness conditions. Once the severity of these soil characteristics are determined, then appropriate measures contained within the geotechnical reports will be incorporated into the design of the project. Feasible techniques to mitigate any defined liquefaction, settlement, and expansive soils could include, but would not be limited to, (1) in-situ densification; (2) vibro replacement; (3) compaction grouting or chemical stabilization; or (4) deep foundations and self supporting structural slabs, (5) over-excavation and replacement with properly compacted fill, and/or (6) design of foundation systems with appropriate thickness and reinforcing.	• Incorporate into project design and construction documents • Prior to grading permit issuance and as part of Improvement Plan approvals	• Public Works Department • Building Safety Department		
GS-2: All cut-and-fill slopes must be designed at a 2:1 [2(h) to 1(v)] gradient or less.	• Incorporate into project design and construction documents • Prior to grading permit issuance	• Public Works Department		

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GS-3: Cut slopes exposing rock that exposes locally-adverse geologic conditions, expose sandy bedrock materials that are friable and prone to erosion, or where possible nuisance seepage issues could occur may require replacement with stabilization fill slopes. Stabilization fill slopes typically consists of removing the exposed slope face in a swath 10 to 15 feet wide (extending in from the slope face) and rebuilding the slope with compacted fill. All cut slopes shall be evaluated to confirm that no adverse geologic conditions are exposed at slope locations.	• Incorporate into project design and construction documents • During on-site grading activities	• Public Works Department		
GS-4: Due to the potential that paleontological resources may be present on the Project site, the City of Moorpark shall require a note on any plans that require ground disturbing excavation that there is a potential for exposing buried paleontological resources. Construction personnel associated with earth moving equipment, drilling, grading, and excavating, shall be provided with basic training conducted by a qualified paleontologist, to be retained and compensated by the development team. Issues that shall be included in the basic training will be geared toward training the applicable construction crews in the identification of areas with the potential for containing paleontological deposits, further described below. Training will include written notification of the restrictions regarding disturbance and/or removal of any portion of paleontological deposits and the procedures to follow should a resource be identified. The construction contractor, or its designee, shall be responsible for implementation of this measure. All project-related ground disturbances that could potentially impact the Saugus Formation and Quaternary older alluvium on site will be mapped by a qualified paleontological monitor and provided to the construction crews during the aforementioned training. The paleontological monitor shall be available on-call as needed, when ground disturbing work is occurring in these areas, as these geologic units are determined to have a high paleontological sensitivity rating. Since younger alluvial and colluvial deposits cover the majority of the site and are considered to have a low paleontological sensitivity, monitoring of excavation activities in these units will be conducted	• Incorporate into project design and construction documents • During ground moving activities	• Community Development Department • Qualified paleontologist retained by development team		

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on a part time/on-call basis to ensure that no underlying sensitive units are being impacted.				
GS-5: A qualified paleontologist as defined by the SVP Guidelines (2010) will be retained, and compensated by the development team, to supervise monitoring of construction excavations and to produce a mitigation plan for the Proposed Project. Paleontological monitoring will include inspection of exposed rock units during active excavations. The monitor will have authority to temporarily divert grading away from exposed fossils in order to professionally and efficiently recover the fossil specimens and collect associated data. The qualified paleontologist will prepare monthly progress reports to be filed with the applicant and the lead agency.	• Incorporate into project design and construction documents • During ground moving activities in event resources are discovered	• Community Development Department • Qualified paleontologist retained by development team		
GS-6: At each fossil locality, field data forms will be used to record pertinent geologic data, stratigraphic sections will be measured, and appropriate sediment samples collected and processed for analysis.	• Incorporate into project design and construction documents • During ground moving activities in event resources are discovered	• Community Development Department • Qualified paleontologist retained by development team		
GS-7: Recovered fossils will be prepared to the point of curation, identified by qualified experts, listed in a database to facilitate analysis, and reposed in a designated paleontological curation facility. Potential repositories include the Natural History Museum of Los Angeles County and the Museum of Ventura County as determined by the Moorpark City Council.	• Incorporate into project design and construction documents • During ground moving activities in event resources are discovered	• Community Development Department • Qualified paleontologist retained by development team		

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GS-8: The qualified paleontologist shall prepare a final monitoring and mitigation report to be filed with the applicant, the lead agency, and the repository.	• Incorporate into project design and construction documents • During ground moving activities in event resources are discovered	• Community Development Department • Qualified paleontologist retained by development team		
HAZARDS AND HAZARDOUS MATERIALS				
HM-1: If any water wells are found during grading or development of the property, the following minimum conditions for well destruction shall be met: • An application for a permit for the destruction of the well shall be filed with the County of Ventura Public Works, per County Ordinance No. 4468 (Well Ordinance) and per the City of Moorpark Municipal Code Chapter 8.40. • Pump and motor shall be removed, and the interior of the well shall be filled with inert material (clean sand or gravel) from total depth to within 40 feet of ground surface or remove debris in well casing to a depth of 40 feet. • Well casing shall be perforated at least every foot opposite the sealing zone from a depth of 40 feet to within 10 feet of finish grade. Perforations shall be placed on alternating sides of the casing. • Neat cement sealing material shall be applied from a depth of 40 feet to within 5 feet of finish grade by means of a grout pipe placed within 2 feet of the base of the sealing zone. If static water level is deeper than 40 feet, grout pipe is not necessary. • Casing shall be removed to a depth of 5 feet below finish grade, and work area backfilled with native materials.	• Incorporate into project design and construction documents • During ground moving activities in event wells are discovered	• Community Development Department • Public Works Department • Ventura County Public Works		

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• County of Ventura Public Works Inspector shall be present during casing perforation work and placement of all sealing material. 24 hour advance notice is required for Public Works Inspections. • All work shall be performed by a well contractor licensed in the State of California and registered with the County of Ventura.				
HYDROLOGY AND WATER QUALITY				
HYD-1: During site preparation and construction, the contractor shall minimize disturbance of natural groundcover on the Project site until such activity is required for grading and construction purposes. During grading operations, the developer shall employ a full-time superintendent for National Pollutant Discharge Elimination System (NPDES) compliance. If determined necessary by the City Engineer/Public Works Director, the NPDES superintendent shall be present on the Project site Monday through Friday and on all other days when the probability of rain is 50 percent or higher and prior to the start of and during all grading or clearing operations until the release of grading bonds. The NPDES superintendent shall have full authority to hire personnel, bind the developer in contracts, rent equipment, and purchase materials to the extent needed to effectuate Best Management Practices (BMPs). The NPDES superintendent shall provide proof to the City Engineer/Public Works Director of attendance and satisfactory completion of courses satisfactory to the City Engineer/Public Works Director totaling no less than 8 hours directed specifically to NPDES compliance and effective use of BMPs. Proof of such attendance and completion shall be provided to the City Engineer/Public Works Director prior to employment of the NPDES superintendent.	• Incorporate into project design and construction documents • During site preparation and construction	• Public Works Department		
HYD-2: Prior to issuance of the initial grading permit, the applicant shall have prepared a Post Construction Stormwater Management Plan (PCSMP) and include Non-Structural, Source Control, and Structural Best Management Practices (BMPs). A certified erosion and sediment control professional or qualified civil engineer shall prepare the PCSMP. The PCSMP shall be reviewed and approved by the Moorpark Community Development Director and City Engineer/Public Works	• Incorporate into project design and construction documents • Prior to grading permit issuance	• Public Works Department		

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			ACTIVITY	DATE COMPLETED
Director. The development of the PCSMP shall conform to the Ventura County National Pollutant Discharge Elimination System permit, the PCSMP standards, and the Technical Guidance Manual for Storm Water Quality Control Measures. The following are the minimum required mitigation from the *Technical Guidance Manual for Storm Water Quality Control Measures*. The PCSMP portion of the drainage master plan shall address: • Storm Drain Message and Signage. The appropriate locations for the signage regarding discharge prohibitions at storm drain inlets and a standard message to be used throughout the specific plan site. • Outdoor Material Storage Area Design. General design criteria for outdoor material storage area design. • Outdoor Trash Storage and Waste Handling Area Design. General design criteria for outdoor trash storage and waste handling area design. • Outdoor Loading/Unloading Dock Area Design. General design criteria for outdoor loading/unloading dock area design. • Outdoor Repair/Maintenance Bay Design. General design criteria for outdoor repair and maintenance bay design. • Outdoor Vehicle/Equipment/Accessory Washing Area Design. General design criteria for outdoor vehicle, equipment, and accessory washing area design. • Fueling Area Design. General design criteria for fueling area design. • Proof of Control Measure Maintenance. To ensure that maintenance is provided, the City of Moorpark Public Works Department (PWD) will require a maintenance agreement and a maintenance plan, including an Storm Water Operations and Maintenance Manual (O&M Manual), from the owner/operator of the storm water control measures. The PCSMP and O&M Manual shall identify the party(ies) responsible for maintenance of control				

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measures and shall be submitted to the PDW for review and acceptance. A Stormwater O&M Covenant shall be recorded for the property.				
HYD-3: The PCSMP/O&M Manual shall include structural and/or treatment BMPs. The structural BMPs shall focus on meeting potential TMDL and pollutant standards for residential developments. The treatment BMPs shall conform to the Technical Guidance Manual for Storm Water Control Measures. The PCSMP guidelines contained in the National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Ventura County state that structural BMPs are required for all new developments. The structural BMPs shall be sized to comply with one of the following numeric sizing criteria, unless an alternative is considered by the permittees to provide equivalent or better treatment. Groundwater quality must be evaluated based on the amount of water and the potential pollutants that may be introduced associated with the buildout of the specific plan site. Volume (SQDV) shall be calculated using the following four allowable methodologies: a. The 85th percentile 24-hour runoff event determined as the maximized capture stormwater volume for the area using a 48 to 72-hour draw down time, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998); or b. The volume of annual runoff based on unit basin storage water quality volume to achieve 80 percent or more volume treatment; or c. The volume of runoff produced from a 0.75 inch storm event; or d. Eighty (80) percent of the average annual runoff volume using an appropriate public domain continuous flow model [such as Storm Water Management Model (SWMM) or Hydrologic Engineering Center – Hydrologic Simulation Program – Fortran (HEC-HSPF)], using the local rainfall record and relevant BMP sizing and design data.	• Incorporate into project design and construction documents • Prior to building permit issuance	• Public Works Department		

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Volume-based BMPs shall be designed to infiltrate or treat either: a. The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in the California Storm Water Best Management Practices Handbook–Industrial/ Commercial (1993), the Ventura Countywide Storm Water Quality Management Program Land Development Guidelines; or b. The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998); or c. The volume of runoff produced for a 0.75-inch storm event, prior to its discharge to a storm water conveyance system; or d. The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" that achieves approximately reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event. The volume of runoff produced from the 85th percentile 24-hour storm event, as determined from the local historical rainfall record. Flow-based BMPs shall be designed to infiltrate or treat either: a. Ten percent of the 50-year design flow rate, or b. A flow that will result in treatment of the same portion of runoff as treated using volumetric standards, or c. A rain event equal to at least 0.2 inch per hour intensity; or d. A rain event equal to at least two times the 85th percentile hourly rainfall intensity for Ventura County. The *Technical Guidance Manual for Storm Water Quality Control Measures* requires that treatment controls measures be used for any new development. The following is a partial list of treatment control measures that may be used by the applicant: • Grass Strip Filter • Grass Swale Filter				

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• Extended Detention Basin • Wet Detention Basin • Constructed Wetland • Detention Basin/Sand Filter • Porous Pavement Detention • Porous Landscape Detention • Infiltration Basin • Infiltration Trench The following discussion identifies treatment control measures that are appropriate for use on the Hitch Ranch Specific Plan site: • Grass Strip and Swales. An appropriate treatment is either vegetative swales, enhanced vegetated swales utilizing check dams and wide depressions, a series of small detention facilities designed similarly to a dry detention basin, or a combination of these treatment methods into a treatment train (a series of Structural BMPs). It is essential that the PCSMP address treatment for Hitch Ranch to assure that the runoff from the site be treated to the "maximum extent practicable." In order for the vegetation swales to be effective in the removal of potential pollutants, the swales must be treated as water quality features and must be maintained differently than grass areas. Specifically, pesticides, herbicides, and fertilizers, which may be used on the grass areas, must not be used in the vegetation swales. Anticoagulant rodenticides are not to be used in any areas within the project. • Infiltration Trenches and Basins. Infiltration trenches and/or basins may be used on site to meet potential future TMDLs for noxious aquatic plants and nutrients. Infiltration trenches and basins treat storm water runoff through filtration. A typical infiltration trench is essentially an excavated trench, which is lined with filter fabric and backfilled with stones. Depth of the				

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infiltration trench ranges from 3 to 8 feet and functions best in areas with permeable soils, and water table and bedrock depth situated well below the bottom of the trench. Trenches should not be used to trap coarse sediments, because large sediment will likely clog the trench. Grass buffers can be installed to capture sediment before it enters the trench to minimize clogging. Infiltration basins are generally used for drainage areas between 5 and 50 acres. Infiltration basins can be either in-line or off-line and may treat different volumes such as the water quality volume or the 2-year or 10-year storm. • All structural BMPs shall be included in the Storm Water O&M Manual.				
HYD-4: Prior to the issuance of the first grading permit and as a part of the project's compliance with the National Pollutant Discharge Elimination System (NPDES) program, the applicant shall file a Notice of Intent (NOI) with the California State Water Resources Control Board providing notification and intent to comply with the State of California general permit. Prior to issuance of the first grading permit, a Storm Water Pollution Prevention Plan (SWPPP) must be completed for on-site and associated off-site construction activities. A copy of the SWPPP must be available and implemented at the construction site at all times. The SWPPP outlines the source control and/or treatment control best management practices (BMPs) that will avoid or mitigate runoff pollutants at the construction site to the "maximum extent practicable." A listing of these BMPs from the *California Storm Water Best Management Practice Handbook-Construction Activity* is provided below. • Dewatering Operations. This operation requires the use of sediment controls to prevent or reduce the discharge of pollutant to storm water from dewatering operations. • Paving Operations. Prevent or reduce the runoff of pollutant from paving operations by proper storage of materials, protecting storm drain facilities during construction, and training employees.	• Incorporate into project design and construction documents • Prior to grading permit issuance	• Public Works Department • Qualified SWPPP Designer (QSD) and qualified SWPPP Practitioner (QSP)		

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• Structural Construction and Painting. Keep site and area clean and orderly, use erosion control, use proper storage facilities, use safe products, and train employees to prevent and reduce pollutant discharge to storm water facilities from construction and painting. • Material Delivery and Storage. Minimize the storage of hazardous materials on the site. If stored on site, keep in designated areas, install secondary containment, conduct regular inspections, and train employees. • Material Use. Prevent and reduce the discharge of pesticides, herbicides, fertilizers, detergents, plaster, petroleum products, and other hazardous materials from entering the storm water. • Solid Waste Management. This BMP describes the requirements to properly design and maintain trash storage areas. The primary design feature requires the storage of trash in covered areas. • Hazardous Waste Management. This BMP describes the requirements to properly design and maintain waste areas. • Concrete Waste Management. Prevent and reduce pollutant discharge to storm water from concrete waste by providing on-site and off-site washouts in designated areas and training employees and consultants regarding their use. • Sanitary Septic Water Management. Provide convenient, well-maintained facilities, and arrange regular service and disposal of sanitary waste. • Vehicle and Equipment Cleaning. Use off-site facilities or wash in designated areas to reduce pollutant discharge into the storm drain facilities. • Vehicle and Equipment Fueling. Use off-site facilities or designated enclosed coverings to reduce pollutant discharge into the storm drain facilities. • Vehicle and Equipment Maintenance. Use off-site facilities or designated on-site enclosed areas with coverings to reduce pollutant discharge into the				

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storm drain facilities. In addition, run a "dry site" to prevent pollution discharge into storm drains. • Employee and Subcontractor Training. Have training sessions for employees and subcontractors to understand the need for implementation and usage of BMPs and the need and purpose for keeping the site clean. • Preservation of Existing Vegetation. Minimize the removal of existing trees and shrubs because they serve as erosion control. • Seeding and Planting. Provide soil stability by planting and seeding grasses, trees, shrubs, vines, and ground cover. • Mulching. Stabilize cleared or freshly seeded areas with mulch. • Geotextiles and Mats. Natural or synthetics material can be used for soil stability. • Dust Control. Reduce wind erosion and dust generated by construction activities by using dust control measures. • Construction Road Stabilization. All on-site vehicle transport routes should be stabilized immediately after grading and frequently maintained to prevent erosion and control dust. • Stabilized Construction Entrance. Stabilize the construction entrance area to reduce amount of sediment tracked off the site. • Earth Dikes. Construct earth dikes of compacted soil to divert runoff or channel water to a desired location. • Temporary Drains and Swales. Use temporary drains and swales to divert off-site runoff around the construction site, stabilized areas, and direct it into sediment basins or traps. • Outlet Protection. Use rock or grouted rock at outlet pipes to prevent scouring of soil caused by high velocities.				

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• Check Dams. Check dams reduce velocities of concentrated flows, thereby reducing erosion, and promoting sedimentation behind the dams. Check dams are small and placed across swales and drainage ditches. • Silt Fence. Composed of filter fabric, which have been entrenched, attached to support poles, and sometimes backed by wire fence support. Silt fences promote sedimentation behind the fence of sediment-laden water. • Straw Bale Barrier. Place straw bales end to end in a level contour in a shallow trench and stake them in place. The bales will detain runoff and promote sedimentation. • Sand Bag Barriers. By stacking sand bags on a level contour, creates a barrier to detain sediment-laden water. The barrier will promote sedimentation. • Brush or Rock Filter. Made of 0.75-inch to 3-inch diameter rocks place on a level contour or composed of brush wrapped in filter cloth and staked to the toe of the slope will provide a sediment trap. • Storm Drain Inlet Protection. Devices that remove sediment from sediment laden storm water before entering the storm drain inlet or catch basin. • Sediment Trap. A sediment trap is a small, excavated, or bermed area where runoff for small drainage areas can pass through allowing sediment to settle out.				
HYD-5: The Hitch Ranch Homeowners Association (HOA) and/or a Community Facilities District (CFD) shall be responsible for the maintenance of the basin embankments and structures so that it does not become a public liability. This information shall be included in the HOA Covenants, Conditions & Restrictions (CC&Rs).	• Incorporate measures into HOA Covenants, Conditions & Restrictions • Review of CC&Rs prior to issuance of first building permit	• Community Development Department		

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NOISE				
NOI-1 When construction operations occur within 100 feet of occupied residential areas and the Walnut Canyon Elementary School, the construction contractor(s) shall implement appropriate noise reduction measures. The following construction best management practices (BMPs) be implemented by contractors to reduce construction noise levels: • Two weeks prior to the commencement of construction, notification must be provided to surrounding land uses within 1,000 feet of a Project site disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period. • Ensure that construction equipment is properly muffled according to industry standards and in good working condition. • Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, i.e., nearby off-site residences, and the faculty, staff, and students of Walnut Canyon Elementary School, where feasible. • Schedule high noise-producing activities, such as large earth-grading equipment that would generate over 85 dB(a), between the hours of 8:00 AM and 5:00 PM to minimize disruption to sensitive uses. • Schedule grading when school is not in session, to the extent feasible. • Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources. • Use electric air compressors and similar power tools rather than diesel equipment, where feasible.	• Conduct construction in conformance with measures herein. • Incorporate into project design and construction documents. • During grading and construction activities	• Community Development Department • Public Works Department		

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• Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 30 minutes. • Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the Moorpark School District or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.				
NOI-2 The construction contractors during grading and earthmoving activities shall adjust vibration amplitudes of the construction equipment used on site, such as by limiting the number of pieces operating in one location at the same time in areas where conditions would affect structures, sensitivity of vibration sensitive equipment, and/or human tolerance.	• Conduct construction in conformance with measures herein. • Incorporate into project design and construction documents. • During grading and earthmoving activities	• Community Development Department • Public Works Department		
NOI-3 Prior to commencing grading and earthmoving activities, provide notification to Walnut Canyon School, and the residential land uses within 1,000 feet of the project at least 10 days in advance of construction activities that are anticipated to result in vibration levels above the 0.09 in/sec PPV threshold, i.e., days when large bulldozers would be in use.	• Conduct construction in conformance with measures herein. • Incorporate into project design and construction documents. • Prior to grading and earthmoving activities	• Community Development Department • Public Works Department		
NOI-4 Storage, maintenance, and operation of earthmoving equipment on the construction site shall be as far from vibration-sensitive sites (i.e., Walnut Canyon School and residential use surrounding the Project site) as possible or practical;	• Conduct construction in conformance with measures herein.	• Community Development Department • Public Works Department		

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use wheeled or rubber-tracked equipment; and small pieces of equipment such as smaller bulldozers when possible.	• Incorporate into project design and construction documents. • During grading and earthmoving activities			
PUBLIC SERVICES				
FP-1: To reduce emergency vehicle delays during construction, the applicant shall implement standard construction traffic control procedures, such as the use of flaggers, and signage showing traffic detour plans, haul routes, hours of operation, protective devices, warning signs and access to abutting properties would further reduce any potential impact.	• Incorporate into project design and construction documents. • Prior to building permit issuance	• Community Development Department • Public Works Department		
PP-1: Open spaces shall be designed to facilitate easy viewing from patrol cars and by citizens on adjacent streets. To the extent possible, and without destroying the character of the open space areas, access streets and trails shall be incorporated into open spaces for occasional patrols and other emergency vehicles. In no event does this require an all-weather surface to be provided on open space trail areas located away from project roadways.	• Incorporate into project design and construction documents. • Prior to approval of Tentative Tract Map	• Community Development Department • Public Works Department		
PP-2: To reduce emergency vehicle delays during construction, the applicant shall implement standard construction traffic control procedures, such as the use of flaggers, and signage showing traffic detour plans, haul routes, hours of operation, protective devices, warning signs, and access to abutting properties would further reduce any potential impact. (This mitigation measure is identical to FP-1)	• Incorporate into project design and construction documents. • Prior to building permit issuance	• Community Development Department • Public Works Department		
TRIBAL CULTURAL RESOURCES				
CUL-1: Due to the potential that archeological resources may be present on the Project site, the City of Moorpark shall require a note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources, including prehistoric Native American artifacts. Construction	• Incorporate into project design and construction documents	• Community Development Department		

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personnel associated with earth moving equipment, drilling, grading, and excavating, shall be provided with basic training conducted by a qualified archaeologist, to be retained and compensated by the development team, with the approval of the City of Moorpark. Issues that shall be included in the basic training will be geared toward training the applicable construction crews in the identification of archaeological deposits, further described below. Training will include written notification of the restrictions regarding disturbance and/or removal of any portion of archaeological deposits and the procedures to follow should a resource be identified. The construction contractor, or its designee, shall be responsible for implementation of this measure. A Native American monitor shall be provided an opportunity to attend the pre-construction briefing if requested. A Native American monitor from a consulting Tribe under AB 52 and a qualified archeologist, to be compensated by the development team, shall be available on an "on-call" basis during ground disturbing construction in native soil to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. If archaeological remains or tribal cultural resources are uncovered, all construction activities within a 100-foot radius shall be halted immediately until a qualified archaeologist, in consultation with the Native American monitor, shall evaluate whether the resource requires further study. The City shall require that the Applicant include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. If any previously undiscovered resources are found during construction the City of Moorpark Community Development Department shall be contacted, and the resource shall be evaluated for significance in terms of CEQA criteria by a qualified archaeologist. Prehistoric archaeological site indicators include but are not limited to: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains,	• During ground disturbing construction activities	• Qualified archeologist retained by development team		

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and fire-affected stones. Historic period site indicators generally include but are not limited to: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps). If City and the qualified archaeologist determine the resource to be significant under CEQA, they shall determine whether preservation in place is feasible. Such preservation in place is the preferred mitigation. Contingency funding and a time allotment sufficient for recovering an archeological sample or to employ an avoidance measure may be required. If such preservation is infeasible, the qualified archaeologist shall prepare and implement a formal Archaeological Monitoring Plan (AMP) which will include a research design and archaeological data recovery plan for the resource. Development and implementation of the AMP will be determined by the City of Moorpark and treatment of any significant cultural resources shall be undertaken with the approval of the project applicant, and the City. The archaeologist shall also conduct appropriate technical analyses, prepare a comprehensive written report and file it with the appropriate information center (California Historical Resources Information System [CHRIS]), and provide for the permanent curation of the recovered materials. The City of Moorpark and/or development team shall, in good faith, consult with the Fernandeño Tataviam Band of Mission Indians and consulting Tribes on the disposition and treatment of any recovered materials. A Monitoring Closure Report shall be filed with the City of Moorpark at the conclusion of ground disturbing construction if archaeological resources were encountered and/or recovered. After the find has been appropriately mitigated (as defined by State CEQA Guidelines Section 15126.4(b)), work in the area may resume.				
CUL-2: If human remains or funerary objects are unearthed during any activities associated with the project, State Health and Safety Code Section 7050.5 requires that no further disturbance shall occur within a 100-foot buffer of the find until the County coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be of Native American descent, the coroner has 24 hours to	• Incorporate into project design and construction documents • During ground disturbing construction activities	• Community Development Department • Qualified archeologist retained by		

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notify the Native American Heritage Commission (NAHC), the Fernandeño Tataviam Band of Mission Indians, and consulting Tribes. The NAHC will then contact the deceased Native American's most likely descendant, who will then serve as consultant on how to proceed with the remains (i.e., avoid, rebury).		development team		
UTILITIES AND SERVICES SYSTEMS				
SW-1: All Tract Map and RPD approvals shall require a waste management plan, consistent with Moorpark Municipal Code Chapter 8.36, prepared by the applicant. At a minimum, the waste management plan shall address the following: • Require that the demolition and construction wastes be recycled or re-used to the extent technically and economically feasible. • Require that recycled content building materials be used during construction to the extent technologically and economically feasible. • Conform to the City's Source Reduction and Recycling Element.	• Incorporate into project design and construction documents • Prior to issuance of certificates of occupancy	• Community Development Department		
WILDFIRE				
WF-1: **Pre-Construction Requirements.** Vegetation management shall be conducted prior to the start of construction and throughout all construction phases by a qualified Ventura County Fire Department-approved third-party fuel modification zone inspector hired by the project applicant. Perimeter fuel modification shall be implemented and approved by the VCFD prior to bringing combustible materials on site. Adequate firebreaks at least 50 feet wide shall be created around all grading, site work, and other construction activities in areas where there is flammable vegetation. Existing flammable vegetation shall be reduced by 50% on vacant lots upon commencement of construction. Firebreaks and fuel modification shall be implemented in accordance with Appendix 3.18, Hitch Ranch Fire Protection Plan, and approved by VCFD. The Project shall comply with the following risk reducing vegetation management guidelines:	• Incorporate into project design and construction documents • Prior to issuance of building permits, during grading and construction activities	• Public Works Department • Ventura County Fire Department		

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• All new power lines shall be underground for fire safety. Temporary construction power lines may be allowed in areas that have been cleared of combustible vegetation. Existing 16 KV power lines within the project may be undergrounded or relocated to the extent practical. • Caution must be used to avoid causing erosion or ground (including slope) instability or water runoff due to vegetation removal, vegetation management, maintenance, landscaping or irrigation.				
WF-2: In order to provide compensating structural protection in the absence of a 100-foot wide FMZ along the eastern property boundary, the structures along the entire eastern side of the development within Planning Area 3 shall include the following features for additional fire prevention, protection, and suppression: • The proposed Triplex structures along the eastern edge of the development within PA3 that are adjacent to existing homes off Casey Road, shall be constructed with multi-pane glazing with a minimum of one tempered pane, and a fire resistance rating of not less than 20 minutes when tested according to NFPA 257, or be tested to meet the performance requirements of State Fire Marshal Standard 12-7A-2 (see Figure 3.18-3). • The remaining Triplex structures along the eastern edge of the development within PA3 are exposed to natural vegetation. Depending on the timing of development of the proposed Senior Living project which currently is not developed, the remaining Triplex structures within the Hitch Ranch development along the eastern edge of the development shall implement either; a.) if the proposed Senior Living development begins construction prior to the Hitch Ranch Project development begins construction, then dual pane single tempered windows will be acceptable, or b.) if the Senior Living development has not begun construction prior to Hitch Ranch Project construction at this site, then dual pane, dual tempered windows will be required for the Hitch Ranch developments that are north of the existing homes off Casey Road up to proposed North Hills Parkway, exceeding the CBC Chapter 7A code requirement (see Figure 3.18-3).	• Incorporate into project design and construction documents • Prior to issuance of building permits, during grading and construction activities	• Community Development Department • Ventura County Fire Department		

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• Provide a noncombustible, 6-foot high concrete masonry unit (CMU) wall at the top of the manufactured slopes behind the units within PA3 along the eastern property boundary. These walls will be installed to function as heat-deflecting walls; vining plants will be established as landscape screening. Note: the use of vining plants may be restricted in FMZ Zones 0, 1, and 2.				
WF-3: A fully irrigated landscape, planted with drought-tolerant, fire-resistive plants shall be implemented. All landscape and fuel modification plans are required to be submitted to the City of Moorpark Community Development Department and the Ventura County Fire Department for review and approval. This includes developer installed landscaping and any landscape installed by individual property owners. The landscaping shall be routinely maintained and shall be watered by an automatic irrigation system that will maintain healthy vegetation with high moisture contents that would minimize ignition by embers from a wildfire.	• Incorporate into project design and construction documents • Prior to issuance of building permits	• Community Development Department • Ventura County Fire Department		
WF-4: The project HOA shall coordinate with the Ventura County Fire Department to provide annual inspections. A copy of each inspection report shall be provided to the City of Moorpark Community Development Director.	• Incorporate into project design and construction documents • Annually, following project occupancy	• Community Development Department • Ventura County Fire Department		

5.0 LIST OF EIR PREPARERS

INTRODUCTION

Impact Sciences, Inc. has prepared this environmental document for the City of Moorpark. Persons directly involved in the review and preparation of this report include:

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APPENDIX A

March 2019 Water Supply Assessment

FINAL
WATER SUPPLY ASSESSMENT
HITCH RANCH PROJECT

MARCH 2019

Prepared for:

COMSTOCK, CROSSER & ASSOCIATES
DEVELOPMENT COMPANY
EL SEGUNDO, CA

Prepared by:
MILNER-VILLA CONSULTING

county of ventura

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Water and Sanitation Department
6767 Spring Road
Moorpark, CA 93020

February 7, 2019

Ms. Harriet Rapista
2301 Rosecrans Avenue, Ste. 1150
El Segundo, CA 90245

Subject: Hitch Ranch WSA Project

Dear Ms. Rapista:

Ventura County Wastewater District has reviewed the water supply analysis (WSA) and has no additional comments. The applicant shall comply with the District standard procedure and prepare a water supply hydraulic analysis and study for the proposed development to determine the extent of capital improvements necessary for the existing water distribution system to serve the subject project for review and acceptance by the District.

If you have any questions regarding the above, please contact Ms. Aurora Isabel, Engineer IV of this office, at (805) 378-3026.

Sincerely,

Kamran Iradjpanah, PhD, P.E.
Engineering Manager
Water and Sanitation Department

CC: Aurora Isabel – Water and Sanitation Department

FINAL

WATER SUPPLY ASSESSMENT

HITCH RANCH PROJECT

MARCH 2019

Prepared for:

COMSTOCK, CROSSER & ASSOCIATES DEVELOPMENT COMPANY

Harriet Rapista, Senior Project Manager
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Frequently Used Acronyms

ac	acre
AF	acre-feet
AFY	acre-feet per year
ASR	aquifer storage and recovery
BMP	best management practice
City	City of Moorpark
CADWR	California Department of Water Resources
CMWD	Calleguas Municipal Water District
County	Ventura County
CRA	Colorado River Aqueduct
District	Ventura County Waterworks District No. 1 (also VCWWD1)
du	dwelling unit
EPM	Emergency Procedures Manual
ETo	evapo-transpiration
FCGMA	Fox Canyon Groundwater Management Agency
GHG	greenhouse gas
gpacpd	gallons per acre per day
gpcd	gallons per capita per day
gpm	gallons per minute
hr	hour
MAF	million acre-feet
MCL	maximum contaminant level
MGD	million gallons per day
MWD	Metropolitan Water District of Southern California
MWRF	Moorpark Water Reclamation Facility
ppdu	persons per dwelling unit
Project	Hitch Ranch Project
SB	Senate bill
sf	square feet
SWP	State Water Project
TDS	total dissolved solids
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WSAP	Water Supply Allocation Plan
WSCP	Water Shortage Contingency Plan
WSDMP	Water Surplus and Drought Management Plan

SECTION 1
INTRODUCTION

1.1 Purpose of Water Supply Assessment

The purpose of this Water Supply Assessment is to demonstrate that future water supplies are sufficient to meet the Ventura County Waterworks District No. 1 (District) projected water demands, inclusive of the Hitch Ranch Development Plan.

This assessment has been prepared in accordance with the requirements of California Law including the following: Public Resources Code Section 21151.9; Water Code Sections 10910-10912, 10915; and Water Code Sections 10608-10656 (original text approved from California Senate Bill 610, Costa). This law places additional requirements on a public agency (in this case the District as the water purveyor for the Hitch Ranch Project) regarding land use and planning and water supply availability. SB 610 took effect on January 1, 2002 and requires that retail water providers demonstrate that sufficient and reliable sources are available for local agencies to approve large-scale developments and complete the environmental review process for projects. See **Appendix A** for a copy of the California Water Code – Water Supply Assessment.

SB 610 requires cities and counties, which determine a project is subject to the California Environmental Quality Act, to identify any public water system that may supply water for the project and to request those public water systems to prepare a specified water supply assessment to be included in any environmental document prepared for the project. This assessment includes, among other information, an identification of existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project and water received in prior years pursuant to those entitlements, rights, and contracts. If the assessment concludes that water supplies are or will be insufficient, the public water system would be asked to submit plans for acquiring additional water supplies.

1.2 Hitch Ranch Project

The Hitch Ranch Project (Project) is located in southeastern Ventura County, within the boundaries of the City of Moorpark (City). Boundaries of the project site include north of Poindexter Avenue, approximately 1,600 feet west of Moorpark Avenue (State Route 23), approximately 4,500 feet south of Championship Drive, and approximately 1,400 feet west of Gabbert Road. **Figure 1-1** indicates the approximate location of the Project.

Development of the entire project as planned will include a maximum of 755 residential units (approximately 261 single-family units and 494 multiple-family units) on approximately 271.8 acres. Construction and occupation of the residential component of the proposed project would result in a theoretical population increase of approximately 2,515 persons based on 3.33 persons per dwelling unit (District, 2015 UWMP, page 3-5). Also included in this development are approximately 12.4 acres of recreational space, 102.8 acres of open space/slopes, and 58.1 acres of public facilities and roads. **Figure 1-2** provides an overview of the proposed Project. **Table 1-1** provides a statistical summary of the Project. Adjacent land uses include residential and open space to the north, residential and institutional to the east, residential and industrial to the south, and residential and open space to the west.

The Hitch Ranch Project may include one of three alternative layouts, named “415”, “620”, “755”. The alternative layout with the highest number of residential units (“755” Project”) includes up to 755 residential units and various parks, open spaces and public facilities. The “415” Project includes up to 415 residential units and various parks, open spaces, and public facilities. The “620” Project includes up to 620 residential units and various parks, open spaces, and public facilities.

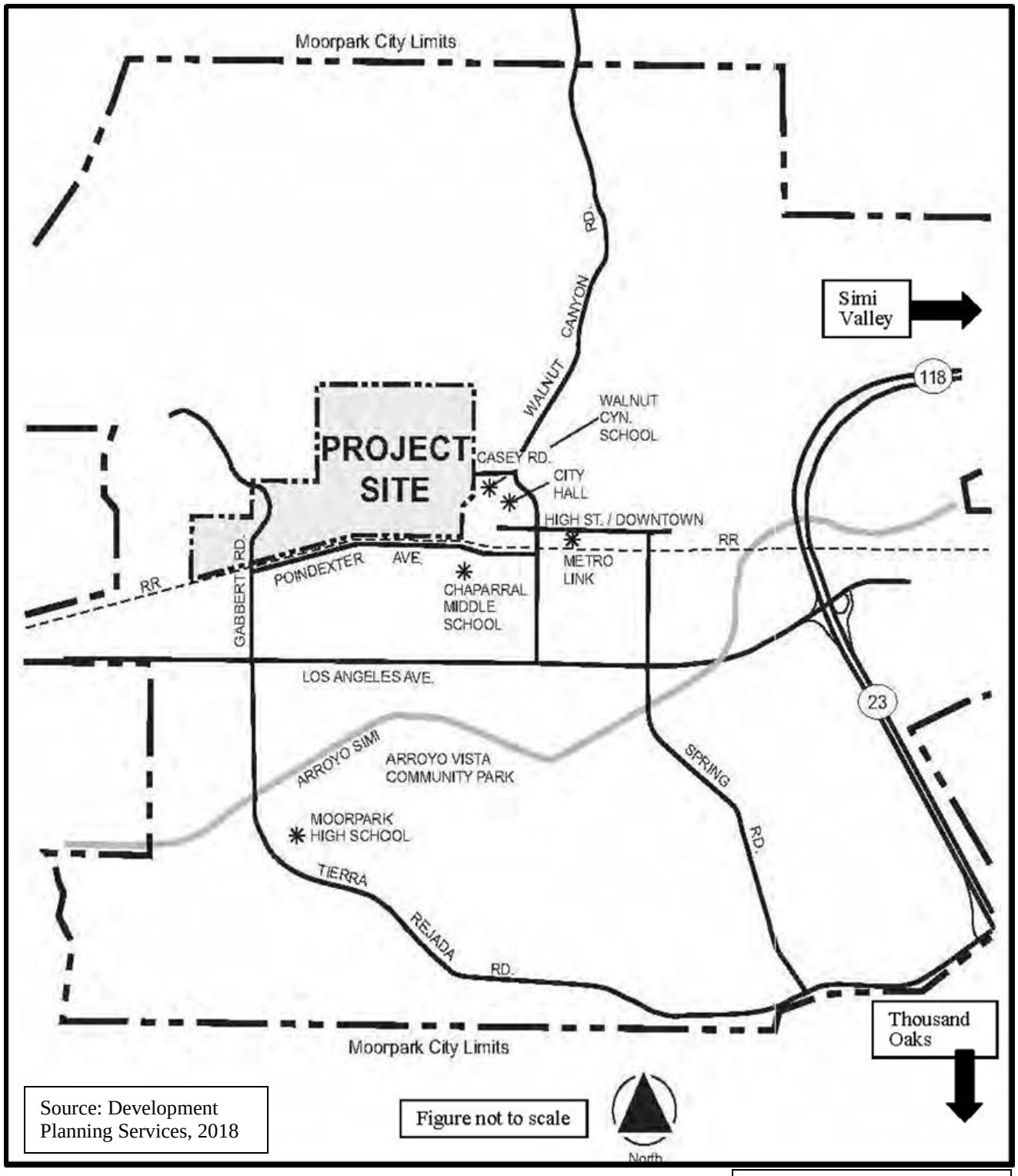

FIGURE 1-1
PROJECT LOCATION

TABLE 1-1
HITCH RANCH PROJECT STATISTICAL SUMMARY

1	Planning Area 1	**LAND USE**	**ACRES**	**DU/AC**	**DU**	**%**
2		Single Family Dwelling Units	25.86		84	40
3		Natural Open Space	19.69			30
4		Manufactured Slopes	19.41			30
5		**TOTAL**	**64.96**	1.29	**84**	**100**
6						
7	Planning Area 2	Single Family Dwelling Units	34.08		177	56
8		Natural Open Space	7.56			13
9		Manufactured Slopes	14.91			25
10		Recreation Lot	2.65			4
11		Passive Rec Lot	1.32			2
12		TOTAL	**60.52**	2.92	**177**	**100**
13						
14	Planning Area 3	Multi Family Dwelling Units	23.46		253	71
15		Manufactured Slopes	5.4			16
16		Recreation Lot	4.1			13
17		TOTAL	**32.96**	7.68	**253**	**100**
18						
19	Planning Area 4	Multi Family Dwelling Units	10.87		241	67
20		Manufactured Slopes	5.4			33
21		TOTAL	**16.27**	14.81	**241**	**100**
22						
23	Planning Area 5	Open Space	**3.37**			**100**
24						
25	Planning Area 6	Open Space	**29.1**			**100**
26						
27	Public Facilites	Park (adjacent to Civic Center)	6.0			10
28		North Hills Parkway	11.97			19
29		"A" Street	4.36			7
30		Meridian Hills Drive	3.03			5
31		Casey Road	1.37			2
32		High Street	6.64			10
33		Gabbert Road	2.86			5
34		VCWPD Easement	2.7			4
35		Detention Basin 3	12.27			19
36		Detention Basin 2	5.96			9
37		Detention Basin 2B	6.3			10
38		TOTAL	**63.46**			**100**
39						
40		TOTAL	**270.64**	2.79	**755**	

Notes:
All data rounded.
Source: Development Planning Services, 2019

Source: Development Planning Services, 2019

FIGURE 1-2
PROJECT LAYOUT - 755

The District will be the retail water purveyor for the Project. The District distributes potable water (combination of imported surface water and groundwater from local wells) to local customers. The District also began serving recycled water in 2003. Estimated water demands for the Project are summarized in Section 3.3.

1.3 City of Moorpark Housing Project

The City of Moorpark Housing Project (Moorpark Housing Project) will be located in the southeast corner of the Hitch Ranch property. The Moorpark Housing Project will not be part of the Hitch Ranch Project and will be built by a separate entity. For purposes of this WSA, water demands for the Moorpark Project will be evaluated separately. Boundaries of the Moorpark Housing Project site include Casey Road (future) to the north, Walnut Canyon Road (Moorpark Avenue/State Route 23) 1,200 feet to the east, High Street (future) approximately 500 feet to the south, and the Hitch Ranch Project to the west. **Figure 1-1** indicates the approximate location of the Project. Adjacent land uses include residential units to the north, school to the east, open space to the south, and residential units to the west.

Development of the Moorpark Housing Project is anticipated to include a maximum of 110 residential units on approximately 5.5 acres. Construction and occupation of the residential component of the proposed project would result in a theoretical population increase of approximately 367 persons based on 3.33 persons per dwelling unit (District, 2015 UWMP, page 3-5). The Moorpark Housing Project is not anticipated to include additional recreational space, open space, nor public facilities.

1.4 Service Area Characteristics

The District's service area encompasses the City and contiguous portions of the unincorporated County. Moorpark is located in the eastern portion of Ventura County, approximately five miles west of the City of Simi Valley and five miles north of the City of Thousand Oaks. **Figure 1-1** provides a location map for the Project.

1.4.1 Climate

The local climate is characterized by hot summer days, cool summer nights, cool winter days, and cool winter nights. **Table 1-2** summarizes local historical climate data including average maximum monthly temperature, average minimum monthly temperature, average monthly precipitation, and standard monthly average evapotranspiration (ETo). Annual average monthly temperatures range from 48ºF to 75ºF. Annual average precipitation is approximately 10.44 inches per year, most of which occurs during the winter season (December to March), based on 2010-2015 data. The value of 10.44 inches per year for local precipitation may be significantly lower than actual as the result of limited years (2010-2015) of data from these data sources. Annual average evapotranspiration is 55.14.

1.5 Demographic Factors

Historically, land uses within the District's service area have focused primarily on municipal and industrial uses (M&I) with agricultural use being secondary. Population in Moorpark was 25,623 in 1990 (US Census, 1990). Estimated current population within the District is approximately 35,782 (District, 2015 UWMP). Increases in future water demands are expected to come primarily from the residential sector as the District's service area builds out. Estimated population projections are provided in **Table 1-3**. The projected population for the year 2040 is 45,000.

TABLE 1-2
LOCAL HISTORICAL CLIMATE CHARACTERISTICS

Parameter	Jan	Feb	Mar	Apr	May	Jun
Average Max Temperature (ºF)[a]	69	69	71	74	75	77
Average Min Temperature (ºF)[a]	41	43	44	46	50	53
Average Precipitation (in)[b]	1.65	1.61	1.89	0.64	0.20	0.03
Standard Monthly Average ETo (in)[c]	2.17	2.80	4.03	5.10	5.89	6.60

Parameter	Jul	Aug	Sept	Oct	Nov	Dec	Annual
Average Max Temperature (ºF)[a]	81	83	82	79	74	69	**75**
Average Min Temperature (ºF)[a]	57	56	55	50	44	41	**48**
Average Precipitation (in)[b]	0.13	0.01	0.12	0.59	0.84	2.72	**10.44**
Standard Monthly Average ETo (in)[c]	7.44	6.82	5.70	4.03	2.70	1.86	**55.14**

Notes:
All data rounded.
Source: District, 2015 UWMP.
(a) Weather.com: http://www.weather.com/weather/monthly/l/USCA0728:1:US.
(b) Ventura County, Moorpark Station 126A: http://vcwatershed.net/hydrodata/php/getstation.php?siteid=126A#top; and Moorpark Station 508: http://vcwatershed.net/hydrodata/php/getstation.php?siteid=508#top.
(c) CIMIS Reference Evapotranspiration Zones, Zone 9 for Moorpark area: http://wwwcimis.water.ca.gov/App_Themes/images/etozonemap.jpg.

TABLE 1-3
DISTRICT POPULATION PROJECTIONS 2020-2040

	2020	2025	2030	2035	2040
Population	**38,000**	**40,000**	**41,700**	**43,300**	**45,000**

Notes:
All data rounded up.
Source: District, 2015 UWMP.

1.6 District's Urban Water Management Plan

SB 610 provides that if the projected water demand associated with the proposed project was accounted for in the Urban Water Management Plan (UWMP) adopted by the retail water purveyor, then relevant information from that UWMP may be incorporated into the SB 610 water supply assessment. The District adopted its 2015 UWMP in June 2016. The Calleguas Municipal Water District (CMWD), supplier of imported surface water to the District, finalized their UWMP in June 2016. The Metropolitan Water District of Southern California (MWD), supplier of imported surface water to CMWD, also finalized their updated UWMP in June 2016.

The District's 2015 UWMP analyzed the water supply needs of a 2015 population of approximately 35,782 and a projected population of 45,000 for the year 2040. The majority of the District's population and water demand is located within the City of Moorpark. Residential water demand accounts for the largest water use sector within the District at 62 percent (see **Section 3** for additional details). The Hitch Ranch development was

accounted for in the City's General Plan and the District's 2015 UWMP. Information in the District's UWMP relevant to this Water Supply Assessment will be identified and incorporated into this Assessment.

1.7 Water Supply Assessment Update

This Water Supply Assessment (WSA) was prepared in July 2018 following two meetings with staff from Ventura County Waterworks District No. 1. In general, water supply assessments are prepared utilizing data and information from local UWMPs and other relevant sources. The District's 2015 UWMP used available information known at the time. Therefore, data and information presented in this WSA regarding availability and reliability of the District's drinking water is consistent with the District's 2015 UWMP and supplemented by additional information provided by the District.

1.8 Report Organization

The remainder of this Water Supply Assessment is organized as follows:

- Section 2 – Water Supply
- Section 3 – Water Demand
- Section 4 – Water Supply Reliability
- Section 5 – Water Shortage Contingency Plan
- Section 6 – Conclusions.

SECTION 2
WATER SUPPLY

This section defines the current and projected water supplies within the District's service area.

2.1 Existing Water Supplies

The District provides its customers a mix of local groundwater, imported water from Calleguas Municipal Water District, and recycled water (for nonpotable demands). Historically, imported water has made up approximately 80 percent of the District's water supply. The District's current sources of supply are described below.

2.2 Local Groundwater Supply

2.2.1 Introduction

The District's water service area overlies groundwater basins in Ventura County that are managed by Fox Canyon Groundwater Management Agency (FCGMA), whose jurisdictional area encompasses about 118,000 acres (185 square miles). The FCGMA was established in Ventura County by a special act of the State Legislature in 1982. The FCGMA was initially created to manage the groundwater in both over-drafted and potentially seawater-intruded areas within Ventura County. The prime objectives and purposes of the FCGMA are to preserve groundwater resources for agricultural, municipal, and industrial uses in the best interests of the public. Protection of water quality and quantity along with maintenance of long-term water supply are included in those goals and objectives. A copy of the FCGMA 2007 Groundwater Management Plan is provided as **Appendix B**.

The basins within the FCGMA are part of the Transverse Ranges geologic province, in which the mountain ranges and basins are oriented in an east-west rather than the typical northeast-southwest trend in much of California and the western United States (District, 2015 UWMP). Active thrust faults border the basins of the Santa Clara River, causing rapid uplift of the adjacent mountains and down-dropping of the basins. The alluvial basins are filled with substantial amounts of Tertiary and Quaternary sediments deposited in both marine and terrestrial (non-marine) settings. The basins beneath the Oxnard Plain are filled

with sediments deposited on a wide delta complex formed at the terminus of the Santa Clara River and was heavily influenced by alternating episodes of advancing or retreating shallow seas that varied with world-wide sea level changes over many millions of years.

There are seven main or significant groundwater basins within the FCGMA. These groundwater basins include the Oxnard Plain Basin, the Oxnard Plain Forebay Basin, the Pleasant Valley Basin, the Santa Rosa Basin, and the Las Posas Valley Basin (East, West and South). These basins generally contain two major aquifer systems, the Upper Aquifer System (UAS) and the Lower Aquifer System (LAS).

The Las Posas Valley Basin is bounded on the south by the Camarillo and Las Posas Hills and on the north by South Mountain and Oak Ridge (California Water Resources Board, CAWRB, 1956). The Las Posas Valley Basin has been subdivided into West, East, and South basins (Hanson, 1998). Productive aquifers in this Basin include a shallow, unconfined aquifer that is most transmissive along the Arroyo Las Posas and a lower confined aquifer system considered to be the equivalent of the Lower Aquifer System on the Oxnard Plain.

The Las Posas Valley Basin is not adjudicated. The Las Posas Valley Basin is not specifically identified as a Basin in an overdraft condition based on California Groundwater Bulletin No. 118 (California Department of Water Resources, CADWR, 2003) and California Water Plan (CADWR, 2013). FCGMA maintains that the

Las Posas Valley Basin is in overdraft relative to the native water supply of the Basin. While the Basin has been sustained in some areas by non-native inflows from wastewater treatment plant discharges, urban runoff, and shallow groundwater dewatering discharges from upstream areas. Since 1992, FCGMA has incrementally reduced groundwater allocations Agency-wide by 25 percent. On April 11, 2014, FCGMA further imposed a Temporary Extraction Allocation (TEA) reduction of 20 percent and implemented high penalties for over-pumping.

2.2.2 East Las Posas Basin

The District has historically produced groundwater from the East Las Posas Basin, which is separated from the West Las Posas Basin by a north-trending, unnamed fault running through Somis, across which groundwater levels differ by as much as 400 feet (CH2MHill, 1993; Hanson, 1998). The fault also acts as a barrier to transport of saline waters from the East Las Posas Basin to the West Las Posas Basin (Bachman, 1999).

The source of recharge to the East Las Posas Basin has changed significantly since urban development of the Simi Valley and Moorpark areas over the last 30 years. Prior to this time, recharge was predominantly from rainfall on outcrop areas and from percolation of winter floodwater along the Arroyo Las Posas. Geochemical studies show that groundwater in the central portion of the East Las Posas Basin is hundreds to thousands of years old, indicating a slow rate of historical recharge along the flanks of the basin (Izbicki, 1996). Urban development has brought increased discharges of both treated wastewater (including treated discharges from the District's Moorpark Water Reclamation Facility (MWRF) and shallow groundwater into Arroyo Las Posas, providing a year-round recharge source for the South Las Posas Basin and East Las Posas Basin (CH2MHill, 1993; Bachman, 2002). This increased percolation from the arroyo has created a recharge mound that extends northward into the East Las Posas Basin, where groundwater levels have risen by 125 feet to 200 feet during the past 30 years.

Conversely, pumping in the Basin has resulted in falling groundwater levels in the eastern portion of the Basin, away from the recharge mound (District, 2015 UWMP). The largest drop in groundwater levels (190 feet) over the period 1973 to 1998 occurred in this region (Bachman, 1999). Groundwater levels have stabilized somewhat across the Basin since the late 1990s, at least in part because of the addition of in-lieu and injected recharge by Calleguas as part of the Las Posas Basin Aquifer Storage and Recovery (ASR) Project.

Increasing concentrations of salts (chloride, sulfate, sodium) in the portion of the Basin along the Arroyo Las Posas continue to be a problem in the East Las Posas Basin. Chloride concentrations in the shallow aquifer beneath the arroyo can reach 360 mg/L, whereas chloride concentrations in the surface waters in the arroyo are in the range of 120 to 180 mg/L (Bachman, 2002). These increased chloride concentrations in the shallow aquifer are associated with historically-high groundwater levels (that apparently leach salts from previously-unsaturated sediments in the shallow aquifer along the arroyo).

Groundwater that contains these chloride-rich salts recharges the Lower Aquifer System by moving downward from the shallow aquifer into the LAS, then northward into the Basin. This recharge has formed a chloride-rich recharge mound beneath the Arroyo Las Posas and northward into the main portion of the East Las Posas Basin (Bachman, 2002). Individual wells along the south flank of the Basin show a progression of filling of the shallow aquifer, with a coincident increase in chloride concentration.

2.2.3 South Las Posas Basin

The South Las Posas Basin is separated from the East Las Posas Basin by an east-trending anticline (fold) that affects all but the shallowest alluvium (District, 2015 UWMP). This fold may affect groundwater flow between the East and South Las Posas Basins at some aquifer depths, although recharge from the South Las Posas Basin flows readily into the East Las Posas Basin at Lower Aquifer System (LAS) depths. To the south, the Springville and Santa Rosa fault zones produce disrupted and tightly folded rocks along the edge of the basin, restricting groundwater flow to the south (CAWRB, 1956). There is a shallow alluvial aquifer that follows the trend of Arroyo Las Posas as it crosses the South Las Posas Basin; this shallow aquifer is in hydrologic connection with the underlying LAS and is the main source of recharge to the LAS.

There has been a significant change in average groundwater levels over the past 40 years in the South Las Posas Basin, with groundwater levels rising more than 100 feet during this period (District, 2015 UWMP). The mechanism for this rise in groundwater elevations is the increased recharge from percolation beneath the Arroyo Las Posas as discharges from the Moorpark and Simi Valley wastewater treatment plants and dewatering wells in Simi Valley have increase year-round flow in the Arroyo Las Posas. The entire alluvial aquifer near the Arroyo Las Posas has progressively filled to the surface of the Basin, starting in the easternmost portion of the Basin in the 1960s and moving westward through the 1990s (Bachman, 2002). Water from the filled alluvial aquifer has percolated into the underlying Lower Aquifer System, creating a recharge mound in the Lower Aquifer System that extends from the Arroyo Las Posas northward into the East Las Posas Basin (CH2MHill, 1993; Bachman, 1999).

Salts (i.e., chloride, sulfate) in the groundwater have increased in the South Las Posas basin and the southwestern portion of the East Las Posas basin as the shallow aquifer filled along Arroyo Las Posas (District, 2015 UWMP). These salts apparently were leached from the shallow aquifer as groundwater levels reached record highs, saturating sediments that have been unsaturated for the historic period. These salts apparently migrated vertically with percolating groundwater into the LAS and then laterally into the main portion of the East Las Posas Basin as the recharge mound developed. Some of this groundwater is unsuitable.

2.2.4 Groundwater Extraction

The District produces groundwater from the East Las Posas Groundwater Basin via five wells owned and operated by the District with a total system capacity of approximately 3,500 gallons per minute (gpm; 2,170 AFY). District wells provide redundant extraction facilities should one or more existing wells become inoperative and will allow for increased extraction capacity during emergency situations. **Table 2-1** summarizes the groundwater pumped by the District for the period 2011 to 2015. **Table 2-1** indicates that the District pumped a low of 1,808 AFY in 2015 and a high of 3,519 AFY in 2013. The groundwater meets all State and Federal water quality standards for drinking water with the exception that treatment is required at one of the well sites (Well No. 20) to lower iron and manganese levels below the State Title 22 Secondary Maximum Contaminant Level (MCL) for these two minerals. The groundwater is chlorinated at each well site before being pumped into the potable water distribution system.

As mentioned above, the District has a groundwater allocation from FCGMA. Although each well has an associated allocation, the District has opted to combine the individual well allocations into one allocation for the District. This combined allocation provides the District with some flexibility by allowing them to pump different amounts of water from any given well or wells (up to the total allocation amounts) based on system demands. The FCGMA, the Groundwater Sustainability Agency (GSA), has reduced the District's maximum allocation to 1,756 AFY for groundwater pumping in 2016. Regardless of system capacity, the District will not be allowed to exceed 1,756 AFY from the East Las Posas Basin going forward without paying a significant penalty. Therefore, as noted in **Table 2-2**, the District's projected groundwater production is 1,756 AFY for 2020-2040.

The District is planning the Moorpark Desalter Project, which is a groundwater production and treatment system that could provide up to 2,500 AFY of potable water for customers in the District's water service area by the end of 2023 (District, 2015 UWMP; Pan, 2018). However, implementation of the California Sustainable Groundwater Management Act (2014) may impact future plans for and construction of the Moorpark Desalter.

TABLE 2-1
DISTRICT GROUNDWATER PRODUCTION 2011-2015

	2011	2012	2013	2014	2015
Existing Groundwater Pumping (a)	2,347	2,796	3,519	2,505	1,808
Total	**2,347**	**2,796**	**3,519**	**2,505**	**1,808**

Notes:
All data in AFY and rounded.
(a) Source: District, 2015 UWMP.

Table 2-2 indicates that estimated total groundwater extracted will be 1,756 AFY for 2020-2040, excluding additional groundwater pumping associated with the Moorpark Desalter Project (Pan, 2018). Additional details are provided in Section 2.6.1.

TABLE 2-2
DISTRICT PROJECTED GROUNDWATER PRODUCTION 2020-2040

	2020	2025	2030	2035	2040
Existing Groundwater Pumping (a)	1,756	1,756	1,756	1,756	1,756
Future Additional Groundwater Pumping (b)	0	0	0	0	0
Total	**1,756**	**1,756**	**1,756**	**1,756**	**1,756**

Notes:
All data in AFY and rounded.
(a) Source: District, 2015 UWMP.
(b) Projected groundwater extractions for 2020-2040 were reduced as per District email dated July 2, 2018 (Pan, 2018). These values represent a decrease of 5,000 AFY (2020-2040) compared to the District's 2015 UWMP.

2.3 Imported Surface Water

2.3.1 Calleguas Municipal Water District

The District purchases imported surface water from the CMWD. The CMWD is an enterprise special district that was formed by the voters of Ventura County in 1953 to provide a safe, reliable water supply. Named for the watershed in which it is located, CMWD is a public agency established under the Municipal Water District Act of 1911. It is governed by a five-member board of directors elected by voters to represent each of the five geographic divisions within the District. In 1960, CMWD became a member agency of Metropolitan Water District of Southern California (MWD), which provides wholesale water from the Colorado River via the Colorado Aqueduct and Northern California via the State Water Project (SWP).

Calleguas distributes high quality drinking water on a wholesale basis to 19 local purveyors, including the District, who in turn deliver water to area residents, businesses, and agricultural customers. Approximately three-quarters of Ventura County residents (roughly 630,000 people) depend on CMWD for all or part of their water (District, 2015 UWMP). Water supplied by CMWD currently represents approximately 73 percent of the total municipal and industrial water demand within its service area.

2.3.2 Metropolitan Water District of Southern California

Metropolitan is a wholesale water agency serving approximately 19 million people in six southern California counties. Metropolitan was formed in 1928 and is composed of 26-member agencies, including CMWD which is the fifth largest member agency in terms of average annual water deliveries. As a wholesaler, Metropolitan has no retail customers, and distributes treated and untreated water directly to its 26-member agencies. MWD provides water from the Colorado River and the State Water Project, and obtains additional supplies from numerous storage facilities, water transfers, exchanges, water banking, and land fallowing projects. The CMWD receives treated water from MWD's Joseph Jensen Filtration Facility in Granada Hills. CMWD receives the treated water via MWD's West Valley Feeder and either stores the treated water in Lake Bard to be treated later or distributes the water among its purveyors.

Metropolitan has a legal entitlement to receive water from the Colorado River under a permanent service contract with the Secretary of the Interior. The Colorado River Aqueduct (CRA) transports water from Lake Havasu, at the border of the states of California and Arizona, approximately 242 miles to its terminus at Lake Mathews in Riverside County. The CRA is owned and operated by Metropolitan and has a capacity of 1.2 million acre feet (MAF) per year (MWD, 2016).

Metropolitan also receives water from the Sacramento River and San-Joaquin River Delta (Delta) in Northern California via the 444-mile-long California Aqueduct (State Water Project, SWP), which is managed by the CADWR. The SWP provides imported water to the MWD service area and has provided from 25 percent to 50 percent of MWD's water supplies. In accordance with its contract with the CADWR, the MWD has a State Water Project Table A allocation of 1.9 MAF per year. The CMWD primarily receives SWP water through MWD with Colorado River water normally available as a backup imported water supply.

MWD's total average water-year supplies from the CRA and SWP are estimated to be 2.8 MAF per year in 2040. MWD's total minimum water supplies for a single dry water-year are estimated to be 2.0 MAF per year in 2040. MWD's total minimum water supplies for a multiple dry water-years are estimated to be 1.9 MAF per year in 2040 (MWD, 2016).

In April 2015, citing continued drought conditions and reduced allocations from the State Water Project and Colorado River, the MWD Board of Directors approved implementing their Water Supply Allocation Plan (WSAP) at a Regional Shortage Level 3 starting July 1, 2015, to cut imported water deliveries to its member agencies by 15 percent. Under a Level 3 WSAP, MWD could impose a surcharge, ranging from $1,480 to $2,960/AF of additional water for any member agency that failed to meet the 15 percent reduction. The allocation plan limits water usage for its 26-member agencies based on their dependency on MWD supplies, local supply conditions, and past water-saving actions. The Tier 1 threshold for CMWD was set at 13.7 percent. The CMWD would pass the surcharge on to CMWD's retail customers exceeding this water allocation threshold. On May 10, 2016, the MWD Board of Directors reduced the WSAP to a Level 2, which is a 10 percent reduction in imported water deliveries, effective immediately, due to lower demands achieved through the region's water saving efforts and improved supply conditions, particularly in northern California; and declared there would be no WSAP set forth for FY 2017. The CMWD also rescinded their surcharge in May 2016.

Table 2-3 indicates that in 2015 the District purchased 7,717 AF of imported surface water (District, 2015 UWMP). **Table 2-3** also summarizes the projected imported surface water anticipated to be purchased by the District for 2020 to 2040. The District estimates a range of 10,204 AFY to 10,943 AFY for 2020-2040 (Pan,2018). Thus, the District anticipates an increase in imported surface water purchases for 2020-2040.

Existing agreements the District has with CMWD do not guarantee the quantity of water the District may purchase. However, to the extent that water is available to CMWD, then CMWD has an obligation to provide water to meet demands of its member agencies, such as the District, by the CMWD's enabling statute, and governing regulations and applicable agreements with the member agencies. CMWD has served the needs of the District without fail, except for a few days following the 1994 Northridge Earthquake.

TABLE 2-3
DISTRICT CURRENT AND PROJECTED IMPORTED SURFACE WATER PURCHASES 2015-2040

	2015	2020	2025	2030	2035	2040
Imported Surface Water (a,b)	7,717	10,204	10,870	10,911	10,880	10,943
Total	**7,717**	**10,204**	**10,870**	**10,911**	**10,880**	**10,943**

Notes:
All data in AFY and rounded.
(a) Source: District, 2015 UWMP.
(b) Projected surface water purchases for 2020-2040 were increased as per District email dated July 2, 2018 (Pan, 2018). These values for 2020-2040 represent an increase of 2,500 AFY (2025-2040) to 5,000 AFY (2020) compared to the District's 2015 UWMP.

2.4 Water Quality

The District provides water of good quality to its customers. Imported surface water supplied by CMWD meets all State and Federal drinking water quality standards. The District's pumped groundwater meets all State and Federal water quality standards for drinking water with the exception that treatment is required at one of the well sites (Well No. 20) to lower iron and manganese levels below the State Title 22 Secondary Maximum Contaminant Level (MCL) for these two minerals. The groundwater is chlorinated at each well site before being pumped into the potable water distribution system. A copy of the District's 2016 Annual Water Quality Report (also known as Consumer Confidence Report), which summarizes the District's potable water quality, is provided in **Appendix C**. Groundwater from the South Las Posas Basin has high levels of TDS and chlorides and requires treatment prior to potable use and as such has not been utilized by the District. However, with the implementation of the future District desalter facilities, this supply will become available.

2.5 Recycled Water

The District collects sanitary wastewater flows within the District's water service area and conveys the flows to the Moorpark Water Reclamation Facility (MWRF). The District operates and maintains the wastewater collection system and the MWRF. Metered wastewater flows averaged 2.0 MGD (2,240 AFY) for 2015 (District, 2015 UWMP). MWRF is located along California State Route 118 just west of the Moorpark city limits. The MWRF, which provides advanced primary and secondary treatment, has a total treatment capacity of 5.0 MGD and a tertiary treatment capacity of 1.5 MGD. The MWRF is required to discharge a portion of its treated effluent to percolation basins for groundwater recharge, which totaled 0.76 MGD (851 AFY) in 2015. The District provides recycled water to eight customers for agricultural and landscape irrigation, and to the MWRF for facilities operations and landscape irrigation. In 2015, the MWRF provided 599 AFY (0.54 MGD) of recycled water for agricultural (lemon) irrigation, landscape irrigation, grading, and dust control uses.

Recycled water supply will increase to approximately 1,100 AFY in 2017 with the conversion of an existing golf course to the recycled water customer base (District, 2015 UWMP). The District forecasts that recycled water demand will increase to 1,400 AFY by 2020, necessitating an expansion of the MWRF's tertiary treatment capacity, and to 2,200 AFY by 2040. Additional details are provided in the District's 2015 UWMP.

2.6 Future Water Supplies

The District anticipates providing its customers a mix of local groundwater, imported water from CMWD, and recycled water (for nonpotable demands) to meet future water demands. The District continually reviews practices that will provide its customers with adequate and reliable supplies. District staff continue to ensure

the water quality is safe and the water supply will meet present and future needs in an environmentally and economically responsible manner. The District consistently coordinates its long-term water shortage planning with CMWD and FCGMA.

The District projects water demand will remain relatively constant over the next 25 years due to slow growth combined with water conservation efforts. Water demands within the District are currently 10,125 AFY (2015) and projected to increase to 13,893 AFY by 2040. The District anticipates that major water supply projects will be implemented to better manage and take advantage of the South Las Posas Groundwater Basin resource (Moorpark Desalter Project, see **Section 2.6.1**), and to increase recycled water use (see **Section 2.6.2**). Additional details regarding District, CMWD, and MWD planned water supply programs are provided in the District's 2015 UWMP.

Table 2-4 provides a summary of the District's projected water resources through 2040. The District anticipates approximately 14,899 AFY of total water resources in 2040 (District, 2015 UWMP). These water resources will include up to a maximum of 1,756 AFY from District wells, 10,943 AFY from imported surface water, and 2,200 AFY from recycled water.

TABLE 2-4
DISTRICT PROJECTED WATER SUPPLIES 2020-2040

Source	2020	2025	2030	2035	2040
Existing Groundwater Pumping (a)	1,756	1,756	1,756	1,756	1,756
Future Additional Groundwater Pumping (b)	0	0	0	0	0
Imported Surface Water (c)	10,204	10,870	10,911	10,880	10,943
Recycled Water (a)	1,400	1,600	1,800	2,000	2,200
Total	**13,360**	**14,226**	**14,467**	**14,636**	**14,899**

Notes:
All data in AFY and rounded.
(a) Source: District, 2015 UWMP.
(b) Projected groundwater extractions for 2020-2040 were reduced as per District email dated July 2, 2018 (Pan, 2018). These values represent a decrease of 5,000 AFY (2020-2040) compared to the District's 2015 UWMP.
(c) Projected surface water purchases for 2020-2040 were increased as per District email dated July 2, 2018 (Pan, 2018). These values represent an increase of 5,000 AFY (2020-2040) compared to the District's 2015 UWMP.

2.6.1 Groundwater Supplies

Table 2-4 indicates that estimated District total groundwater extracted will be 1,756 AFY for 2020-2040, excluding additional groundwater pumping associated with the Moorpark Desalter Project (Pan, 2018). The FCGMA reduced the District's maximum allocation to 1,756 AFY for groundwater pumping from the East Las Posas Basin.

2.6.2 Additional Imported Surface Water Purchases

The District noted that the amount of imported water purchased will increase to meet the growth in water demand for years with insufficient supplies from groundwater extractions and recycled water (Pan, July 2, 2018). **Table 2-4** summarizes the projected imported surface water anticipated to be purchased by the District for 2020 to 2040 (range of 8,380 AF in 2035 to 10,204 AF in 2020). Thus, the District anticipates an increase in imported surface water purchases for 2020-2040.

2.6.3 Recycled Water Expansion

The existing tertiary treatment capacity of the District's MWRF is currently 1.5 MGD. Potential expansion of the recycled water distribution system may serve additional tertiary treated effluent from the MWRF to additional agricultural irrigation and landscape irrigation customers in the service area (District, 2015 UWMP). While this improvement will not impact the District's potable water system, it will enhance water supply within the District by reducing the need for imported water. The District will continue to convert existing uses currently being served from the potable water system to the recycled water system. In 2015, the District distributed 599 AFY of recycled water. The District anticipates distributing approximately 1,100 AFY by 2018 with the conversion of an existing golf course to the recycled water customer base. **Table 2-4** indicates that the estimated demand for recycled water supply will increase to 1,400 AFY by 2020, necessitating an expansion of the MWRF's tertiary treatment capacity by 2025. **Table 2-4** also indicates that estimated recycled water demand will reach 2,200 AFY by 2040 (District, 2015 UWMP).

2.6.4 Other Water Resources

The District does not plan to use self-supplied surface water, storm water, nor desalinated water to supplement existing water resources.

2.7 Effects of Global Climate Change

2.7.1 Introduction

Current climate change projections suggest that California will continue to enjoy a Mediterranean climate with the typical seasonal pattern of relatively cool and wet winters and hot, dry summers. However, climate patterns are different now and may continue to change at an accelerated pace. Increases in global emissions of greenhouse gases are leading to serious consequences for California including, but not limited to, the following: higher air and water temperatures, rising sea levels, increased droughts and floods, decreased amount and duration of snow pack, and extreme variability in weather patterns (CADWR, 2013; California Natural Resources Agency, CANRA, 2009). These changes are anticipated to intensify over the 20-year planning horizon of this Assessment. Even if all emissions of greenhouse gases ceased today, some of these developments would be unavoidable because of the increase in greenhouse gases recorded over the last 100 years and the fact that the climate system changes slowly (Public Policy Institute of California, PPIC, 2011). Many of these climate changes would affect the availability, volume, and quality of California water supplies.

2.7.2 Potential Impacts of Climate Change

State and local water supplies and water demands may be impacted by climate change via one or more processes including precipitation, air temperature, runoff, sea level change, and flooding. Rainfall variability is expected to increase, leading to more frequent droughts and floods. Runoff from snowpack may be earlier and less predictable, and precipitation may fall as more rain and less snow. Air temperatures in California are anticipated to increase by 2 to 9 degrees Fahrenheit by the year 2100 (CANRA, 2009). Higher air temperatures may result in more rain and less snow, diminishing the reserves of water held in the Sierra Nevada snowpack (CANRA, 2009). Spring runoff from snowpack is occurring earlier now than it did in the first part of the 20th century. This change in runoff could affect availability of spring and summer snowmelt from mountain areas, including State Water Project water from the Sacramento Delta and local rivers and streams. Total annual exports from the Delta for State and Federal contractors may also decrease by 20 to 25 percent by the year 2100 (California Climate Change Center, CCCC, 2009).

Sea levels have risen by as much as 7 inches along the California coast over the last century (CANRA, 2009). According to some estimates, sea level is projected to rise an additional 2 to 5 feet by 2100 (PPIC, 2011; Pacific Institute, 2009; CANRA, 2009; Climate Action Team, CAT, 2008). These sea level increases could significantly impact infrastructure within coastal areas and affect quantity and timing of State Water Project water exports from the Sacramento Delta. Effects of sea level rise in the Delta would be two-fold: (1) problems

with weak levees protecting the low-lying land, many already below sea level; and (2) increased salinity intrusion from the ocean which could degrade fresh water transfer supplies pumped at the southern edge of the Delta or require more fresh water releases to repel ocean salinity.

The CADWR Water Plan includes an assessment of the impacts of global climate change on the State's water supply was conducted using a series of computer models based on decades of scientific research. Model results for California indicate a significant likelihood of increased temperature, reduction in Sierra snow depth, early snow melt, and a rise in sea level (CADWR, 2013). These changing hydrological conditions could affect future planning efforts which are typically based on historic conditions. Difficulties in water supplies planning that may arise include, but are not limited to, the following:

- hydrological conditions, variability, and extremes that are different than what current water systems were designed to manage.
- changes occurring too rapidly to allow sufficient time and information to permit managers to respond appropriately.
- special efforts or plans to protect against surprises and uncertainties.

As such, CADWR will continue to provide updated results from these models as further research is conducted and new information becomes available.

2.7.3 Potential Effects of Climate Change on Water Demand

Climate change may increase daytime and nighttime temperatures and seasonal temperatures. This change may impact the length of the growing season. This general increase in temperatures coupled with greater variability and unpredictability in precipitation is expected to lead to increases in evapotranspiration resulting from warmer seasons; thereby creating an increase in demand for irrigation water and an increase in the year-to-year variability of demand.

Temperate fruit and nut trees such as almonds, pistachios, and apples require adequate winter chill to produce economically viable yields. Increased temperatures daytime, nighttime, and season temperatures may reduce winter chill hours thereby causing adverse effects on the yield of some crops. Some farmers are beginning to overcome this change by planting trees closer together and using new varieties.

Studies are now underway to prepare farmers for the likely impacts of climate change. Such efforts include breeding varieties of fruit trees which can withstand the decreased water chill hours, developing tools to aid the crops in coping with insufficient chill, and researching the temperature responses of orchard crops to better understand potential long-term effects. However, some solutions such as replanting orchards with altered crop varieties or the installation of aiding tools may not be feasible for many irrigators.

2.7.4 Mitigation and Adaptation

Responding to climate change generally takes two forms: mitigation and adaptation. Mitigation is taking steps to reduce human contribution to the causes of climate change by reducing greenhouse gas (GHG) emissions. Adaptation is the process of responding to the effects of climate change by modifying our systems and behaviors to function in a warmer climate (CADWR, 2013).

In the water sector, climate change mitigation is generally achieved by reducing energy use, becoming more efficient with energy use, and/or substituting renewable energy sources in place of fossil fuel based energy sources. Because water requires energy to move, treat, use, heat, and discharge, water conservation is also energy conservation. As each water supplier implements water conservation measures and determines its water conservation targets, it can also calculate conserved energy and GHGs not-emitted as a side benefit. Once a water supplier has calculated the water conserved by a best management practice (BMP), it is straightforward to convert that volume to conserved energy, and GHGs not-emitted. Additionally, water suppliers may want to

focus on implementing water conservation measures that conserve water but do so at a significant decrease in GHG emissions as compared with other measures (CADWR, 2013).

Climate change means more than hotter days. Continued warming of the climate system has considerable impact on the operation of most water districts. Snow in the Sierra Nevada provides 65 percent of California's water supply. Predictions indicate that by 2050 the Sierra snowpack will be significantly reduced. Much of the lost snow will fall as rain, which flows quickly down the mountains during winter and cannot be stored in our current water system for use during California's hot, dry summers. The climate is also expected to become more variable, bringing more droughts and floods. Water districts will have to adapt to new, more variable conditions (CADWR, 2013).

Principles of climate change adaptation include the following:

- As more mitigation is completed now, the less adaptation we may have to do in the future, because climate impacts could be less severe.
- Mitigation is much less expensive than adaptation.
- Mitigation should happen globally.
- Adaptation must happen locally.
- Adaptation strategies should be implemented according to future conditions, regular assessment and recalibration.
- Some adaptation strategies have benefits that can be realized today.

2.7.5 Local Strategies

As climate change continues to unfold in the coming decades, water agencies may need to mitigate and adapt to new strategies, which may require reevaluating existing agency missions, policies, regulations, facilities, funding priorities, and other responsibilities. Examples of mitigation and adaptation strategies include, but not limited to, the following:

- Prepare long-term facility and sustainability master plans including specific elements for climate change adaptation.
- Increase ground water recharge using additional surface water and recycled water.
- Increase recycled water demands.
- Promote additional water use efficiency for urban, commercial, and industrial best management practices.
- Increase investments in infrastructure that promotes adaptation strategies (such as ground water recharge, and recycled water) and existing principal facilities susceptible to impacts of climate change.

Notwithstanding the above strategies for dealing with climate change, the reality is that current environmental regulations place a very high priority on releasing additional water for endangered species (i.e., Sacramento River and San Joaquin River) and the environment. The potential for increased water demand for environmental resources and the possibility of reduced water supplies will be one of the biggest challenges confronting water agencies.

The goal of the District is to utilize the available surface water and groundwater supplies as effectively as possible in meeting the requirements of the District's water users. It is worth noting, however, that the District's control over water supplies is limited; thus, management practice changes will need to be adaptive in nature.

SECTION 3
WATER DEMAND

This section defines historic and current water usage and the methodology used to project future demands within the District's service area. Water usage is divided into sectors such as: residential, industrial, institutional/governmental, landscape/recreational, agricultural, and other purposes.

3.1 Historic/Current District Water Use

Average District annual water demands (groundwater production and imported water purchases) were 12,970 AF in 1990 and decreased to 10,124 AF in 2015 as shown in **Table 3-1**. These data indicate that water demand within the District has decreased by 22 percent upon comparison of 1990 demands and 2015 demands, while the local population increased by approximately 40 percent. Significant changes in total demands (such as the decrease observed in 1995) were likely due to changes in local precipitation which affect residential landscape watering and agricultural irrigation. The decrease in water demands in 2015, compared to the period 2000 to 2010, are likely due to District water conservation programs and State-mandated demand reduction requirements.

TABLE 3-1
DISTRICT HISTORICAL TOTAL WATER DEMANDS 1990-2015

Calendar Year	**Total Water Demands (AFY)** (a)
1990	12,970
1995	9,694
2000	11,570
2005	11,872
2010 (b)	11,774
2015 (b)	10,124

Notes:
All data rounded.
(a) Source: District, UWMP, 2005, 2011, and 2015.
(b) Includes recycled water.

3.2 Factors Affecting Water Usage

Water demand is a function of several factors. Geographic location, topography, land use, demography, and water system characteristics (i.e., system pressures, water quality and metering of connections) all influence water usage. Water demand characteristics within the District will therefore differ from water demands of other areas in California according to one or more of these factors.

Two major factors that affect water usage are weather and water conservation. Historically, when the weather is hot and dry, water usage within the District increases. The amount of increase varies according to the number of consecutive months and years of hot dry weather and the conservation activities imposed. During cool-wet

years, historical water usage within the District has decreased mainly due to less water usage for external landscaping. In recent years, water conservation has become an increasingly important factor in water supply planning in California. In 2014, the State Water Resources Control Board mandated significant water demand reductions for all urban water agencies. In addition, the California Plumbing Code has instituted requirements for new construction that mandate the installation of ultra-low-flow toilets and low-flow showerheads. Additional information is available from the District regarding local water conservation programs (District, 2015 UWMP).

3.3 Projected District Water Demands

The District's population projections were presented in **Section 1**. Current population within the District is estimated to 35,782 (District, 2015 UWMP). Projected population for the year 2040, is estimated to be 45,000. Residential (single-family and multiple-family) accounted for 93 percent of the total water connections in 2015. **Table 3-2** summarizes the projected water demand by water use sector. Projected demands increase to 13,893 AFY by 2040. Residential demands within the District are currently the largest water use sector, and projected to be the highest water use sectors through 2040. **Table 3-2** includes the water demands for the Hitch Ranch Project.

TABLE 3-2
DISTRICT CURRENT AND PROJECTED WATER DEMANDS BY SECTOR 2015-2040

Water Use Sector	Current 2015	2020	2025	2030	2035	2040
Potable Water Demand						
Residential (single-fam. + multiple-fam.)	5,869	6,777	7,076	7,212	7,316	7,429
Commercial	533	617	631	640	647	654
Industrial	135	156	160	162	164	166
Institutional	341	395	404	410	414	419
Agricultural	2,384	2,615	2,615	2,615	2,615	2,615
Loss	263	386	395	400	405	409
Recycled Water Demand	599	1,400	1,600	1,800	2,000	2,200
Total Water Demand	**10,124**	**12,345**	**12,880**	**13,240**	**13,560**	**13,893**

Notes:
All data in AFY and rounded.
Source: District, 2015 UWMP.

Agricultural water demands in the District's service area are met with interruptible supplies from CMWD. This designation means that potable water supplied to these users are at a reduced water rate, however the supplies can be curtailed at any time at the discretion of the supplier.

3.4 Estimated Water Demands for Hitch Ranch Project

It is anticipated that all residential units within the Hitch Ranch Project will maximize use of water conservation measures both inside and outside the dwellings. Use of these measures throughout the Hitch Ranch Project will reduce the water demand as compared to residential units that do not implement water conservation measures. The Hitch Ranch Project will include use of recycled water for all non-residential landscape irrigation demands, including parks, medians, slopes, and other irrigated areas.

Table 3-3 indicates that the current average District residential water demand is 0.53 acre-feet per connection (146.4 gallons per capita per day, gpcd), for all types and ages of housing in the District. This value is 18 percent less than the average in 2005 (District, 2015 UWMP; Table 4-1B, page 4-3). The District indicated that customers in newer housing units use less water per person than older housing units, and future housing is anticipated to use even less. The District indicated that for new housing projects, such as the Hitch Ranch Project, the estimated residential water rate is 135 gpcd for single-family homes and 60 gpcd for multiple-family homes (District, 2018).

TABLE 3-3
DISTRICT ANNUAL CONSUMPTION RATES BY SERVICE TYPE

Service Type	Estimated Annual Consumption Rate
Residential (a)	0.53 acre-feet per connection
Commercial (b)	3.69 acre-feet per connection
Institutional (b)	7.25 acre-feet per connection
Industrial (b)	3.89 acre-feet per connection
Agricultural (b)	17.67 acre-feet per connection
Construction (b)	0.53 acre-feet per connection
Others (Fire and Hydrant) (b)	1.30 acre-feet per connection

Notes:
(a) District, 2015 UWMP; 146 gallons per person per existing dwelling unit per day for total indoor and outdoor demands; includes 3.33 persons per dwelling unit. However, the District approved new home residential water rate of 135 gpcd for single-family homes and 60 gpcd for multiple-family homes (District, 2018).
(b) District, 2005 UWMP.

The Hitch Ranch Project may include one of three alternative layouts, named “415”, “620”, and “755”. The alternative layout with the highest number of residential units is the “755” Project. For purposes of this WSA, details will be provided regarding the water demands of the 755 Project.

The 755 Project includes construction of approximately 755 residential units, with 261 single-family units, 494 multiple-family units, and a variety of open space areas. Estimated specific water demands for the 755 Project are provided in **Table 3-4**. Total potable water demand for the 755 Project will be approximately 242.4 AFY, while recycled water demand will be approximately 103.7 AFY. Total potable and nonpotable demand will be approximately 346.2 AFY. As indicated previously, water demands for the Hitch Ranch Project were included in the total water demand projections in the District’s 2015 UWMP (District, 2015 UWMP, Section 3.4.2).

For comparison, the total potable water demand for the 415 Project will be approximately 202 AFY, recycled water demand will be approximately 112 AFY, and total water demand will be approximately 314 AFY (rounded up). Total potable water demand for the 620 Project will be approximately 263 AFY, recycled water demand will be approximately 112 AFY, and total water demand will be approximately 375 AFY (rounded up).

TABLE 3-4
ESTIMATED WATER DEMANDS FOR THE HITCH RANCH PROJECT - 755

Sector	Quantity	Factor	Water Demand Rate	Estimated Water Demand (AFY)
POTABLE WATER DEMAND (a)				
Single Family Residence	261 du	3.33 ppdu	135 gpcd	131.4
Multi-Family Residence	494 du	3.33 ppdu	60 gpcd	110.6
Institutional (b)		0 people	20 gpcd	0
City Park (c)		200 people	2 gpcd	0.4
Total Potable Water Demand				**242.4**
RECYCLED WATER DEMAND (d)				
Landscape Irrigation - Residential	0 ac		0 AFY/ac	0
Landscape Irrigation – Slopes/fire suppression	38.8 ac		1.886 AFY/ac	73.1
Landscape Irrigation – Parks	12.4 ac		1.886 AFY/ac	23.4
Landscape Irrigation – Road medians/strips	3.8 ac		1.886 AFY/ac	7.2
Natural open space	69.7 ac		0 AFY/ac	0
Total Recycled Water Demand				**103.7**
TOTAL WATER DEMAND				**346.2**

Notes:
All values rounded.
Abbreviations: du = dwelling units; ac = acre; ppdu = persons per dwelling unit; gpcd = gallons per capita per day; gpacpd = gallons per acre per day; AFY/ac = acre feet per year per acre
(a) Potable water demands based on single-family total residential demand of 135 gallons per capita per day, and multiple-family residential demand of 60 gallons per capita per day (District, 2018).
(b) No project element at this time.
(c) Approximately 12.43 acres total at 4 sites; 100% potable demand for drinking fountains and restrooms; estimate of 200 visitors per day that use water x 2 gallons per visitor that use water.
(d) Landscape irrigation based on proposed land use estimates in the Hitch Ranch Specific Plan, 2016.

3.5 Estimated Water Demands for Moorpark Housing Project

As noted in Section 1.3, development of the Moorpark Housing Project is anticipated to include a maximum of 110 residential units on approximately 5.5 acres. Construction and occupation of the residential component of the proposed project would result in a theoretical population increase of approximately 367 persons. It is anticipated that all residential units within the Moorpark Housing Project will maximize use of water conservation measures both inside and outside the dwellings. Use of these measures throughout the Moorpark Housing Project will reduce the water demand as compared to residential units that do not implement water conservation measures. The Moorpark Housing Project will include use of recycled water for all non-residential landscape irrigation demands, including parks, medians, and other irrigated areas.

Table 3-3 indicates that the current average District residential water demand is 0.53 acre-feet per connection (146.4 gallons per capita per day, gpcd), for all types and ages of housing in the District. This value is 18 percent

less than the average in 2005 (District 2015 UWMP; Table 4-1B, page 4-3). The District indicated that customers in newer housing units use less water per person than older housing units, and future housing is anticipated to use even less. The District indicated that for new housing projects, such as the Moorpark Housing Project, the estimated residential water rate is 135 gpcd for single-family homes and 60 gpcd for multiple-family homes (District, 2018).

The Moorpark Housing Project includes construction of approximately 110 multiple-family residential units. Estimated specific water demands for the Moorpark Housing Project are provided in **Table 3-5**. Total potable water demand for the Moorpark Housing Project will be approximately 24.6 AFY, while recycled water demand will be approximately 1.0 AFY. Total potable and nonpotable demand will be approximately 25.6 AFY.

TABLE 3-5
ESTIMATED WATER DEMANDS FOR THE MOORPARK HOUSING PROJECT

Sector	Quantity	Factor	Water Demand Rate	Estimated Water Demand (AFY)
POTABLE WATER DEMAND (a)				
Single Family Residence	0 du	3.33 ppdu	135 gpcd	0
Multi-Family Residence	110 du	3.33 ppdu	60 gpcd	24.6
Institutional		0 people	20 gpcd	0
City Park		0 people	2 gpcd	0
Total Potable Water Demand				**24.6**
RECYCLED WATER DEMAND				
Landscape Irrigation - Residential	0.5 ac		2 AFY/ac	1.0
Landscape Irrigation – Slopes/fire suppression	0 ac		1.886 AFY/ac	0
Landscape Irrigation – Park/institutional	0 ac		1.886 AFY/ac	0
Landscape Irrigation – Road medians/strips	0 ac		1.886 AFY/ac	0
Natural open space	0 ac		0 AFY/ac	0
Total Recycled Water Demand				**1.0**
TOTAL WATER DEMAND				**25.6**

Notes:
All values rounded.
Abbreviations: du = dwelling units; ac = acre; ppdu = persons per dwelling unit; gpcd = gallons per capita per day; gpacpd = gallons per acre per day; AFY/ac = acre feet per year per acre
(a) Potable water demands based on single-family total residential demand of 135 gallons per capita per day, and multiple-family residential demand of 60 gallons per capita per day (District, 2018).

SECTION 4:
WATER SUPPLY RELIABILITY

This Section provides a discussion of the reliability of the water supply within the District's service area. A comparison between the water supply and demand for an average water year, single-dry water year, and multi-dry water years is also provided.

4.1 Reliability

Reliability is "how much one can count on a certain amount of water being delivered to a specific place at a specific time" and depends on the availability of water from the source, availability of the means of conveyance and level and pattern of water demand at the place of delivery.

4.1.1 Plan to Assure Reliable Water Supply

Recognizing its dependence on imported water supplies and the need to improve water supply reliability during drought events, the District anticipates use of the following sources of supply for the period 2020 to 2040:

- Groundwater from the District's wells
- CMWD imported surface water
- Recycled water from the District
- Desalted Groundwater (after the project is complete).

4.2 Reliability Comparison

The Urban Water Management Planning Act requires an assessment of water supply reliability and vulnerability to seasonal or climatic shortage. Reliability is a measure of a water service system's anticipated success in managing water shortages. This assessment must include a comparison of the total projected water demand with the total water supply available for the following conditions: (1) average/normal water-year, (2) single dry water-year, and (3) three consecutive dry water-years. Additional details are provided in the District's 2015 UWMP.

4.2.1 Normal Water-Year Supply and Demand Comparison

A summary of the District's projected 20-year water supplies and demands for normal water-year conditions is provided in Table 4-1. As noted in Table 4-1, the District's total projected normal water-year water supplies available through 2040 are projected to exceed water demands associated with existing and planned uses within the District's service area, including the Hitch Ranch Project, by 1,007 to 1,345 AFY. District anticipates meeting its normal water-year demands from 2020 to 2040 via use of existing supplies (local ground water and imported surface water), implementation of the Moorpark Desalter, and increased use of recycled water to meet future water demands in normal water-years (District, 2015 UWMP).

TABLE 4-1
DISTRICT NORMAL WATER-YEAR SUPPLY AND DEMAND COMPARISON 2020-2040

	2020	2025	2030	2035	2040
Total Supply	13,360	14,226	14,467	14,636	14,899
Total Demand	12,345	12,881	13,239	13,561	13,892
Difference	**1,015**	**1,345**	**1,228**	**1,075**	**1,007**

Notes:
All data in AFY and rounded.
Source: District, 2015 UWMP.

4.2.2 Single Dry Water-Year Supply and Demand Comparison

A summary of the District's projected 20-year water supplies for a single dry-year condition is provided in Table 4-2. The District anticipates supplies to exceed demands from 2020 to 2035 in a single dry water-year by 31 to 314 AFY via use of existing supplies, implementation of the Moorpark Desalter, and increased use of recycled water (District, 2015 UWMP). However, for the year 2040, the District anticipates a deficit of approximately 66 AFY. The District may need to consider additional water supplies (purchase additional imported surface water, future potable and recycled water programs administered by the District, CMWD, and MWD) and implementation of additional conservation measures to meet future water demands in single dry water-years.

TABLE 4-2
DISTRICT SINGLE DRY WATER-YEAR SUPPLY AND DEMAND COMPARISON 2020-2040

	2020	2025	2030	2035	2040
Total Supply	12,932	13,687	13,950	14,115	14,365
Total Demand	12,890	13,373	13,750	14,084	14,431
Difference	**42**	**314**	**200**	**31**	**(66)**

Notes:
All data in AFY and rounded.
Source: District, 2015 UWMP.

4.2.3 Multiple Dry Water-Years Supply and Demand Comparison

A summary of the District's projected 20-year water supplies and demands for multiple dry water-year conditions is provided in Table 4-3. Water supplies available through 2040, during multiple dry water-year conditions, are projected to exceed water demands associated with existing and planned uses within the District's service area, including the Hitch Ranch Project, by 513 to 1,039 AFY. The District anticipates use of existing supplies, implementation of the Moorpark Desalter, increased use of recycled water, and implementation of additional conservation measures to meet future water demands in multiple dry water-years (District, 2015 UWMP).

TABLE 4-3
DISTRICT MULTIPLE DRY WATER-YEARS SUPPLY AND DEMAND COMPARISON 2020-2040

		2020	2025	2030	2035	2040
First Year	Total Supply	13,149	14,143	14,442	14,606	14,918
	Total Demand	12,636	13,104	13,472	13,798	14,138
	Difference	**513**	**1,039**	**970**	**808**	**780**
		2020	**2025**	**2030**	**2035**	**2040**
Second Year	Total Supply	13,149	14,143	14,442	14,606	14,918
	Total Demand	12,636	13,104	13,472	13,798	14,138
	Difference	**513**	**1,039**	**970**	**808**	**780**
		2020	**2025**	**2030**	**2035**	**2040**
Third Year	Total Supply	13,149	14,143	14,442	14,606	14,918
	Total Demand	12,636	13,104	13,472	13,798	14,138
	Difference	**513**	**1,039**	**970**	**808**	**780**

Notes:
All data in AFY and rounded.
Source: District, 2015 UWMP.

SECTION 5
WATER SHORTAGE CONTINGENCY PLAN

5.1 Introduction

Water shortages arise not only from drought, but shortages resulting from earthquakes, fires, system failures, and water quality contamination as well. California's extensive system of water supply infrastructure, its reservoirs, groundwater basins, and inter-regional conveyance facilities, mitigates the effect of short-term dry periods. Defining when a drought begins is a function of drought impacts to water users. Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Droughts occur slowly, over a multiyear period. Drought impacts increase with the length of a drought, as carry-over supplies in reservoirs are depleted and water levels in groundwater basins decline.

Section 2 of this WSA summarizes the District supplies. Section 3 defines the water demands. Section 4 defines the water supply reliability. In addition, the District's water demand management measures will play an essential role in limiting water use during drought times. Additional details available in the District's 2015 UWMP.

5.2 District Water Shortage Response

To meet short-term water demand deficiencies, and short-term or long-term drought requirements, the District has included a Water Shortage Contingency Plan (WSCP), which is included as Part 1, Section K of the Ventura County Waterworks Districts Rules and Regulations (copy of Part 1 provided in **Appendix D**). The District has also adopted permanent water conservation measures included in Section L of their Rules and Regulations. In the event of a water shortage, the Director of the County of Ventura Public Works Agency (Agency Director) is authorized and directed to implement provisions of the District's WSCP, subject to ratification by the District Board at its first regularly scheduled meeting (District, 2015 UWMP). The Agency Director determines the extent of conservation or water use efficiency required through the implementation and/or termination of conservation stages or levels consisting of three levels for the District to prudently plan for and supply water to its customers. However, in the case of local emergencies, the Director of the Water and Sanitation Department has the authority to order the implementation of the appropriate stage of water conservation. Stages of the District's WSCP are summarized in **Section 5.3**.

Provisions of the District's WSCP will be implemented in congruence with the policy of the MWD and CMWD water shortage/drought activities. The CMWD policy will be based on one or more of MWD's adopted planning documents including, but not limited to, the following:

- Water Surplus and Drought Management Plan (WSDMP)
- Water Supply Allocation Plan (WSAP)
- Regional Integrated Water Resources Plan
- Urban Water Management Plan
- Long Term Conservation Plan.

The MWD's WSDMP is designed to guide management of regional water supplies to achieve reliability goals for southern California. The Water Supply Allocation Plan is designed to provide a framework for administering an allocation should a water shortage be declared.

The City of Moorpark, which encompasses much of the District, has adopted the CADWR's Model Water Efficient Landscape Ordinance that set forth standards for landscape irrigation during drought and non-drought times, and acknowledges the constant need to establish long-term water efficiency (City Ordinance 10-383,

Chapter 15.23). This ordinance covers all landscaping within new developments as well as rehabilitated landscape (District, 2015 UWMP).

5.3 Rationing Stages and Reduction Goals

To meet short-term water demand deficiencies and short-term or long-term drought requirements, the District will implement its own water shortage policy in accordance with the District's Water Conservation Program. In addition, the District will consider the policy of CMWD, which is anticipated to be based on MWD's policies and planning documents. It is important to note that agricultural water service is interruptible at all times. Mandatory allocations are avoided to the extent practicable, however, in the event of an extreme shortage, an allocation plan will be adopted in accordance with the principles of the MWD's WSDMP and WSAP. The three stages of the District's WSCP are shown in **Table 5-1** and described below.

5.3.1 Level 1 Water Supply Shortage

A Level 1 water supply shortage is declared when the Agency Director determines in his or her sole discretion that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions.

TABLE 5-1
STAGES OF DISTRICT WATER SHORTAGE CONTINGENCY PLAN

Level	Percent Supply Reduction (a)	Water Supply Condition
1	NA	A water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water
2	NA	A water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water. Additional prohibited water uses are identified relative to Level 1 prohibitions
3	NA	A significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety

Notes:
(a) Percent supply reduction is not used by the District to signal a level of the WSCP; rather, it is up to the discretion of the Agency Director or other authorized person to determine the severity of the water shortage and the appropriate level of the WSCP.

5.3.2 Level 2 Water Supply Shortage

A Level 2 water supply shortage is declared when the Agency Director determines in his or her sole discretion that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Additional prohibited water uses are identified relative to Level 1 prohibitions.

5.3.3 Level 3 Water Supply Shortage

A Level 3 water supply shortage condition is also referred to as an "Emergency" condition. A Level 3 condition is declared when the Agency Director determines that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety. The Agency Director declares a water shortage emergency and notifies District residents and businesses of the emergency.

Additional details regarding the District's WSCP are available in the District's 2015 UWMP and the County Rules and Regulations (see copy of Part 1, Section K included in **Appendix D**).

5.4 CATASTROPHIC SUPPLY INTERRUPTION

A water shortage emergency could be the result of a catastrophic event such as result of drought, failures of transmission facilities, a regional power outage, earthquake, flooding, supply contamination from chemical spills, or other adverse conditions. These emergencies and the District's method for handling them are described below. County Rules and Regulations regarding water shortages (see copy of Part 1, Section K included in **Appendix D**) includes actions for any event which results in loss of supply.

In addition, the District prepared an Emergency Procedures Manual (EPM, Ventura County, 2010). The County's EPM (Section VII) describes responses to emergency situations resulting from natural disasters, system failures, and other unforeseen circumstances. The EPM provides guidelines for evaluating an emergency situation and procedures for activating an emergency response. The EPM identifies various levels of emergencies (Level 1, Level 2, and Level 3), and provides examples of response to several emergencies, including but not limited to local flooding, power failures, earthquakes, and hazardous material releases.

Examples of the District's response procedures to an emergency are summarized below.

5.4.1 Earthquakes or Other Natural Disasters

The District is located in an earthquake zone. In the event of an earthquake or natural disaster, the District has the potential of losing its imported water supply and or ground water supply. If such a loss occurs, the District could temporarily increase its ground water production (if available) to meet water demand until repairs to the imported water supply facilities were completed and the supply restored. In addition, the District would follow the procedures outlined in their EPM and or County of Ventura Multi-Hazard Mitigation Plan (Ventura County, 2010; Ventura County, 2015). In the event of a prolonged loss of imported water and or groundwater, the District could implement their established Water Shortage Plan from the County Rules and Regulations (**Appendix D**) to substantially reduce demands until supply is restored.

5.4.2 Contamination of Water Supply

Contamination of water supply can result from several different events including a water main break, cross-connection condition, water source pollution, or covert action. Water supplies for the District are generally of good quality and no foreseeable permanent contamination issues are anticipated. In the event of a toxic spill or major contamination, the District would follow the procedures outlined in their EPM (Ventura County, 2010). The District would isolate the problem and reduce the impact to the water supply. Once the problem has been isolated, the contamination would be cleaned up using chlorination or other necessary procedures and the water supply returned to service as soon as possible. The EPM also includes an Emergency Disinfection Plan. In the meantime, alternative supply would be utilized to meet demand. Implementation of additional demand management measures could also be utilized if the outage is anticipated to be of longer duration. If necessary, the District would implement the procedures outlined in the County Rules and Regulations regarding water shortages (see copy of Part 1, Section K included in **Appendix D**).

5.4.3 Power Failure

In the event of a regional power failure, the District would follow the procedures outlined in their EPM (Ventura County, 2010). Standby generators are available at each of the District's well and pump station sites to maintain operation should an interruption of power occur. The EPM lists all of the stationary and mobile generators located at the various District facilities, with model numbers, kilowatt rating, and fuel tank capacity. If necessary, the District would implement the procedures outlined in the County Rules and Regulations regarding water shortages (see copy of Part 1, Section K included in **Appendix D**).

SECTION 6
CONCLUSIONS

The purpose of this Water Supply Assessment is to demonstrate that future water supplies are sufficient to meet the District's projected water demands, inclusive of the Hitch Ranch Development Plan.

The Hitch Ranch Project is located in southeastern Ventura County, within the boundaries of the City of Moorpark. The Hitch Ranch Project may include one of three alternative layouts, named "415", "620", and "755". As proposed, the 755 Project as planned will include a maximum of 755 residential units (approximately 261 single-family dwellings and 494 multiple-family dwellings) on approximately 272 acres. Construction and occupation of the residential component of the proposed project would result in a theoretical population increase of approximately 2,515 persons (based on 3.33 persons per dwelling unit; District, 2015 UWMP). Also included in this development are approximately 12.4 acres of recreational space, 102.8 acres of open space/slopes, and 58.1 acres of public facilities and roads.

It is anticipated that all residential units within the Hitch Ranch Project will maximize use of water conservation measures both inside and outside the dwellings. Use of these measures throughout the Hitch Ranch Project will reduce the water demand as compared to existing residential units that do not implement water conservation measures. The Hitch Ranch Project will include infrastructure for use of recycled water for all non-residential landscape irrigation demands, including water for parks, medians, and open spaces.

The District will be the retail water purveyor for the Project including potable (drinking) water and nonpotable (recycled) water. The District distributes potable water via a combination of imported surface water purchased from the CMWD and groundwater from the District's local wells. The District also distributes recycled water for nonpotable demands. The District, CMWD, and its wholesaler, MWD, have taken significant steps to diversify their existing and future water supply resources to enhance service reliability to the District's water customers. The District's plans to enhance water supply reliability include expanding the recycled water distribution system, constructing a Moorpark Groundwater Desalter to create additional local potable water, and expanding the District's MWRF tertiary facilities to increase the volume of available recycled water supplies. In addition, the District continues to support extensive water conservation programs for customers in the service area.

The Hitch Ranch Project layout with the highest water demand is the "755" Project. The 755 Project total potable water demand will be approximately 242.4 AFY, while recycled water demand will be approximately 103.7 AFY. Total potable and nonpotable demand will be approximately 346.2 AFY. As indicated previously, water demands for the Hitch Ranch Project were included in the total water demand projections in the District's 2015 UWMP (District, 2015 UWMP, Section 3.4.2).

The Moorpark Housing Project includes construction of approximately 110 multiple-family residential units on approximately 5.5 acres. The Moorpark Housing Project will not be part of the Hitch Ranch Project and will be built by a separate entity. For purposes of this WSA, water demands for the Moorpark Project will be evaluated separately. Total potable water demand for the Moorpark Housing Project will be approximately 24.6 AFY, while recycled water demand will be approximately 1.0 AFY. Total potable and nonpotable demand will be approximately 25.6 AFY.

Based on the analysis summarized in this Water Supply Assessment (and supported by the District's 2015 UWMP), the District's total projected normal water-year water supplies available through 2040 are projected to exceed water demands associated with existing and planned uses within the District's service area, including the Hitch Ranch Project, by 1,007 to 1,345 AFY. Under single dry water-year conditions, the District's water supplies available through 2040 are projected to exceed the projected water demands associated with existing and planned uses within the District's service area, including the Hitch Ranch Project, by 31 to 314 AFY (with one exception). This potential exception is the year 2040 when demands may exceed supplies by 66 AFY. Water

supplies available through 2040, during multiple dry water-years conditions, are projected to exceed water demands associated with existing and planned uses within the District's service area, including the Hitch Ranch Project, by 513 to 1,039 AFY.

As previously noted, the District, CMWD, and its wholesaler, MWD, have taken significant steps to diversify their existing and future water supply resources to enhance service reliability to the District's water customers during normal and drought conditions. On the supply side, the District plans to enhance local potable water supplies and recycled water supplies (District, 2015 UWMP). On the demand side, the District will continue to support extensive water conservation programs for customers in the service area. These conservation measures will continue to reduce the average residential water use per household for existing and new customers. The District noted that the amount of imported water purchased will increase to meet the growth in water demand for years with insufficient supplies from groundwater extractions and recycled water (Pan, July 2, 2018).

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APPENDICES

A – California Water Code – Water Supply Assessment

B – FCGMA Groundwater Management Plan

C – District's 2017 Annual Water Quality Report

D – Ventura County Waterworks District Nos. 1, 16, 17, and 19 Rules and Regulations (Part 1 only)

Appendix A

California Water Code – Water Supply Assessment

CALIFORNIA WATER CODE
SECTION 10910-10915
October 14, 2016

10910. (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

(c) (1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

(d) (1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

(A) Written contracts or other proof of entitlement to an identified water supply.

(B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.

(C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.

(D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.

(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contractholders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments.

(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

(g) (1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was

received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

(2) Prior to the expiration of the 90-day period, if the public water system intends to request an extension of time to prepare and adopt the assessment, the public water system shall meet with the city or county to request an extension of time, which shall not exceed 30 days, to prepare and adopt the assessment.

(3) If the public water system fails to request an extension of time, or fails to submit the assessment notwithstanding the extension of time granted pursuant to paragraph (2), the city or county may seek a writ of mandamus to compel the governing body of the public water system to comply with the requirements of this part relating to the submission of the water supply assessment.

(h) Notwithstanding any other provision of this part, if a project has been the subject of a water supply assessment that complies with the requirements of this part, no additional water supply assessment shall be required for subsequent projects that were part of a larger project for which a water supply assessment was completed and that has complied with the requirements of this part and for which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has concluded that its water supplies are sufficient to meet the projected water demand associated with the proposed project, in addition to the existing and planned future uses, including, but not limited to, agricultural and industrial uses, unless one or more of the following changes occurs:

(1) Changes in the project that result in a substantial increase in water demand for the project.

(2) Changes in the circumstances or conditions substantially affecting the ability of the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), to provide a sufficient supply of water for the project.

(3) Significant new information becomes available which was not known and could not have been known at the time when the assessment was prepared.

10911. (a) If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be,

insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

(b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

10912. For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) (A) Except as otherwise provided in subparagraph (B), a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet

of floor area.

(B) A proposed photovoltaic or wind energy generation facility approved on or after October 8, 2011, is not a project if the facility would demand no more than 75 acre-feet of water annually.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

(c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections. A public water system includes all of the following:

(1) Any collection, treatment, storage, and distribution facility under control of the operator of the system that is used primarily in connection with the system.

(2) Any collection or pretreatment storage facility not under the control of the operator that is used primarily in connection with the system.

(3) Any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

(d) This section shall remain in effect only until January 1, 2018, and as of that date is repealed, unless a later enacted statute, that is enacted before January 1, 2018, deletes or extends that date.

10914. (a) Nothing in this part is intended to create a right or entitlement to water service or any specific level of water service.

(b) Nothing in this part is intended to either impose, expand, or limit any duty concerning the obligation of a public water system to provide certain service to its existing customers or to any future potential customers.

(c) Nothing in this part is intended to modify or otherwise change existing law with respect to projects which are not subject to this part.

(d) This part applies only to a project for which a notice of preparation is submitted on or after January 1, 1996.

10915. The County of San Diego is deemed to comply with this part if the Office of Planning and Research determines that all of the following conditions have been met:

(a) Proposition C, as approved by the voters of the County of San Diego in November 1988, requires the development of a regional growth management plan and directs the establishment of a regional planning and growth management review board.

(b) The County of San Diego and the cities in the county, by agreement, designate the San Diego Association of Governments as that review board.

(c) A regional growth management strategy that provides for a comprehensive regional strategy and a coordinated economic development and growth management program has been developed pursuant to Proposition C.

(d) The regional growth management strategy includes a water element to coordinate planning for water that is consistent with the requirements of this part.

(e) The San Diego County Water Authority, by agreement with the San Diego Association of Governments in its capacity as the review board, uses the association's most recent regional growth forecasts for planning purposes and to implement the water element of the strategy.

(f) The procedures established by the review board for the development and approval of the regional growth management strategy, including the water element and any certification process established to ensure that a project is consistent with that element, comply with the requirements of this part.

(g) The environmental documents for a project located in the County of San Diego include information that accomplishes the same purposes as a water supply assessment that is prepared pursuant to Section 10910.

Appendix B

FCGMA Groundwater Management Plan

2007 Update to the Fox Canyon Groundwater Management Agency Groundwater Management Plan

Prepared by

Fox Canyon Groundwater Management Agency
United Water Conservation District
Calleguas Municipal Water District

May 2007

ACKNOWLEDGEMENTS

This Groundwater Management Plan was prepared by Steven Bachman, with extensive advice and reviews by Fox Canyon Groundwater Management Agency staff (Jeff Pratt, Gerhardt Hubner, Gerard Kapuscik, Christian Laber, David Panaro, and Sheila Lopez) and United Water Conservation District staff (Dana Wisehart, Ken Turner, Dan Detmer, Jim Kentosh, Murray McEachron, Pete Dal Pozzo, and John Dickenson). Lowell Preston (formerly of FCGMA), Curtis Hopkins (for Municipal and Industrial [M&I] providers), Rob Saperstein (for City of Oxnard), John Mathews (for Pleasant Valley County Water District), Tony Emmert (City of Oxnard), Lucia McGovern (City of Camarillo), John Powell (Saticoy Country Club), David Borchard (FCGMA Board Member), and Lawrence (Larry) Fuller provided additional comments and reviews.

EXECUTIVE SUMMARY

The Fox Canyon Groundwater Management Agency (FCGMA) was initially created to manage the groundwater in both overdrafted and potentially seawater-intruded areas within Ventura County. The prime objectives and purposes of the FCGMA are to preserve groundwater resources for agricultural, municipal, and industrial uses in the best interests of the public and for the common benefit of all water users. Protection of water quality and quantity along with maintenance of long-term water supply are included in those goals and objectives.

Initial goals of the FCGMA included balancing water supply and demand in the Upper Aquifer System (UAS) by the year 2000 and in the Lower Aquifer System (LAS) by year 2010. These goals and the FCGMA's basic purpose remain relatively unchanged today. The initial Groundwater Management Plan for the FCGMA was prepared in 1985. This current document is an update to that initial Plan. Since preparation of the initial Plan, significantly more is now known about the occurrence of the seawater intrusion and basin overdraft through focused monitoring programs, studies, and modeling. There has also been a period of time to observe how FCGMA policies and water conservation facilities have improved groundwater conditions.

The goals of this Management Plan are to set specific, measurable management objectives for each basin, identify strategies to reach these goals, and set future FCGMA policy to help implement these strategies. The FCGMA cannot itself build and operate conservation facilities, so the focus of this Plan is both on potential FCGMA policies and on strategies and policies that can assist in implementing conservation projects by other agencies. Thus, the FCGMA acts as a partner with the other agencies in improving conditions in the aquifers within the Agency.

The main focus of the initial Groundwater Management Plan was to contain seawater intrusion in the south Oxnard Plain basin. The combination of FCGMA policies and new water conservation facilities, which included the FCGMA pumping reductions, shifting of pumping from the Upper Aquifer System to the Lower Aquifer System, the construction of the Freeman Diversion, and the operation of the Pumping Trough and Pleasant Valley pipeline systems, has had a significant effect on seawater intrusion in at least a portion of the aquifers. The most significant effect was the reduction of the lobe of seawater in the Upper Aquifer System at Port Hueneme. Monitoring wells drilled into this lobe indicate that seawater intrusion has retreated and is no longer detectable in some areas near Port Hueneme, with groundwater in one well improving from near-seawater back to drinking-quality water.

However, the containment of saline waters is not complete. In the Pleasant Valley and south Oxnard Plain basins, saline waters both from the ocean and from adjacent fine-grained sediments have expanded the area of saline intrusion since 1985. This increase occurred in the Upper Aquifer System near Point Mugu and the Lower Aquifer System in the Port Hueneme and Point Mugu areas. Thus, continuation of current strategies and the implementation of additional strategies are required to fully contain saline intrusion.

Additional water quality problems have also been identified since the original FCGMA Plan was adopted. These include increasing chlorides and other salts in the South Las Posas basin and locally in the Pleasant Valley basin, as well as increased nitrates in the Forebay basin during periods of reduced rainfall and groundwater recharge.

This 2007 Update to the FCGMA Groundwater Management Plan discusses and reviews a number of aspects of groundwater management:

- background information on the groundwater basins;
- history of groundwater extractions within the FCGMA;
- water quality issues, both generally and basin-by-basin,
- basin management objectives to indicate the health of the basin and the efficacy of current and future management strategies;
- the yield of the groundwater basins;
- current management strategies and their effectiveness;
- management strategies under development and their potential effectiveness;
- potential future management strategies and their potential effectiveness; and
- recommended actions to be taken by the FCGMA.

In addition, three appendices include:

- progression of saline intrusion in the Upper and Lower Aquifers;
- description of the Ventura Regional Groundwater Model that was used to evaluate management strategies, as well as details of those evaluations; and
- East Las Posas Basin Management Plan, which deals with issues specific to that basin and that will be adopted as part of this Groundwater Management Plan.

Basin Management Objectives (BMOs) are defined for the basins within the FCGMA in this Plan. The BMOs are measurable groundwater elevation and water quality goals that, if reached, protect the aquifers from further saline intrusion and other water quality problems. The BMOs are set at particular key wells in the groundwater basins. Current groundwater conditions meet the BMO criteria in some, but not all of the basins. They fail to meet BMOs in the Lower Aquifer and portions of the Upper Aquifer in the Oxnard Plain and Pleasant Valley basins, periodically in the Forebay basin, and locally in the Las Posas and Santa Rosa basins. Using the Ventura Regional Groundwater Model to evaluate the effectiveness of management strategies into the future, current management strategies are predicted to meet BMOs for groundwater elevations 51% of the time in the Upper Aquifer and only 5% of the time in the Lower Aquifer[*].

The annual yield of the basins within the FCGMA was calculated to be about 120,000 acre-feet (AF) for the 1985 Groundwater Management Plan. Current pumping within the FCGMA has decreased to something close to that number, however, and BMOs are not being met in key areas – which is consistent with the groundwater model results discussed in the previous paragraph. To recalculate the yield of the basin, groundwater pumping was progressively reduced in the model until BMOs were met on average 50% or more of the time. Pumping would have to be reduced to 100,000 acre-feet per year (AFY) to meet the BMOs, providing that these additional reductions were accomplished largely in the south Oxnard Plain and Pleasant Valley basins.

Because current management strategies are not sufficient to meet BMOs and pumping needs to be reduced to 100,000 AFY, additional management strategies need to be implemented. A series of these additional strategies are proposed in this Plan. Some of these strategies are currently being developed, whereas others would be implemented in the future. For strategies

[*] Percentage is based on the average number of quarters when BMOs are met at each BMO well during the 55-year modeling period of the Ventura Regional Groundwater Model. For an initial target, it is proposed that groundwater elevation BMOs be met at least 50% of the time, thus taking into account that climatic cycles will cause groundwater elevations to rise and fall periodically above and below these objectives.

that were amenable to being evaluated using the Ventura Regional Groundwater Model, the effectiveness in meeting BMOs was calculated.

The following table summarizes the proposed strategies; the strategies are grouped initially by when they could be implemented and secondarily within each time increment by their potential effectiveness in managing the basins and meeting BMOs.

Strategies Currently Under Development

- GREAT Project (recycled water for in-lieu delivery and direct injection)
- South Las Posas Pump/Treat (pump poor quality water and blend/treat it)
- Development Brackish Groundwater, Pleasant Valley (similar to previous, pumping from northern Pleasant Valley basin)
- Non-Export FCGMA Water (water pumped within FCGMA and applied in adjacent areas outside the Agency)
- Continuation of 25% Pump Reduction (continue original Plan strategy of 25% reductions by 2010)
- RiverPark Recharge (additional Santa Clara River recharge)

5-Year Strategies

- 5-Year Update of Plan
- Shift Pumping to UAS (prepare technical basis and policy)
- Protect Recharge (protect current sources of recharge)
- Limit Nitrates in the Forebay (land use, Best Management Practices)
- Recovery of Credits from the Forebay (uniform policy)
- Verification of Extraction Reporting (verify accuracy of reporting)
- Separate Strategies for Each Basin (as needed)
- FCGMA Boundary (adjust slightly to reflect new hydrogeologic understanding)
- Irrigation Efficiency (determine if warrants modifications)
- Additional Storage Projects (to help fill overdrafted basins)
- Penalties Used to Purchase Replacement Water (refill overpumped areas)
- Additional Water Conservation (encourage local agencies)
- Shelf Life for Conservation Credits (limit the long-term accumulation of credits and/or limit number of credits pumped in any one year)

10-Year Strategies

- Additional In-lieu Deliveries to South Oxnard Plain
- Import Additional State Water (for direct or in-lieu recharge)
- Further Destruction of Abandoned or Leaking Wells
- Additional Monitoring Needs (as needed to track saline intrusion or other groundwater issues)

15-Year Strategies

- Barrier Wells in South Oxnard Plain
- Injection of Treated River Water into Overdrafted Basins
- Increase Diversions from Santa Clara River (additional water rights from peak storm flows)
- Shift Pumping to Northwest Oxnard Plain

Greater Than 15-Year Strategies

- Additional Reductions in Pumping Allocations (if strategies are not fully implemented or if they fail to meet BMO targets)

The Ventura Regional Groundwater Model was used to evaluate the effect of individual strategies, as well as the combination of strategies. If all the strategies are implemented as recommended (especially those ranked highest in each time horizon), the model predicts that BMOs for the Upper Aquifer will be met 67% of the time and BMOs for the Lower Aquifer will be met 76% of the time – a major improvement that would likely halt further degradation of groundwater quality.

This management plan calls for a set of actions to implement the recommended strategies. Some of these strategies can be implemented directly by the FCGMA through policy additions or modifications. Other strategies, especially those requiring infrastructure to be built, will be largely the responsibility of other organizations. To ensure that all the strategies are implemented as seamlessly as possible, it is recommended that there be a joint Strategic Planning and Implementation effort with the other agencies that will help implement the strategies in this Plan.

The importance of implementing the strategies in this Plan is illustrated by three potential choices that are available to the FCGMA, organizations, and groundwater pumpers:

- Implementation of recommended strategies in this Plan –resulting in major improvement in overdraft conditions and the potential halt in further degradation of groundwater quality; or
- Most effective strategies not implemented because of cost, lack of cooperation, lack of will – resulting in further FCGMA reductions in pumping allocations. Reductions of an additional 85% of pumping in the south Oxnard Plain and Pleasant Valley basins would be required to meet BMOs; or
- No effective management strategies are implemented and there are no further reductions in pumping allocations – the Lower Aquifer in the south Oxnard Plain and Pleasant Valley basins will degrade until it can no longer be pumped without expensive treatment prior to delivery of the groundwater.

TABLE OF CONTENTS

1.0 INTRODUCTION

The Fox Canyon Groundwater Management Agency (FCGMA) (Figure 1 and Plate 1) is located in Ventura County and encompasses several coastal basins that underlie the cities of Oxnard, Port Hueneme, Camarillo, and Moorpark. The Agency overlies about 118,000 acres (185 sq mi). The FCGMA was initially created to manage the groundwater in both overdrafted and potentially seawater-intruded areas within Ventura County. The prime objectives and purposes of the FCGMA are to preserve groundwater resources for agricultural, municipal, and industrial uses in the best interests of the public and for the common benefit of all water users. Protection of water quality and quantity along with maintenance of long-term water supply are included in those goals and objectives.

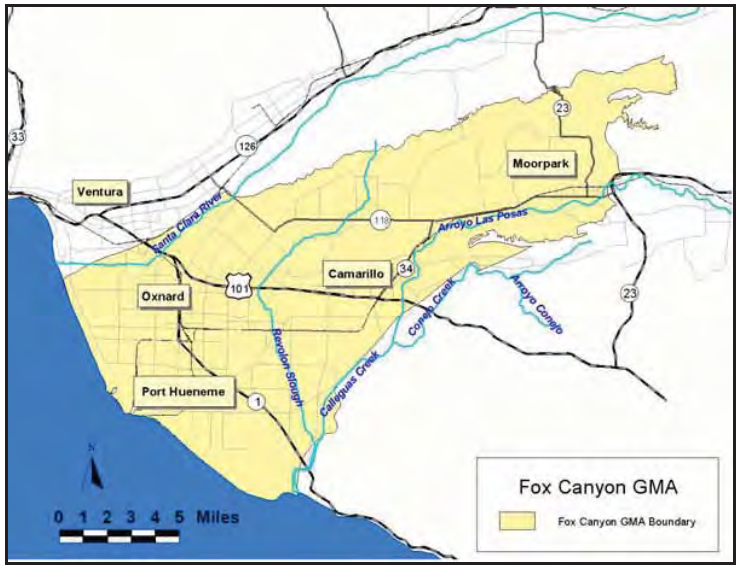
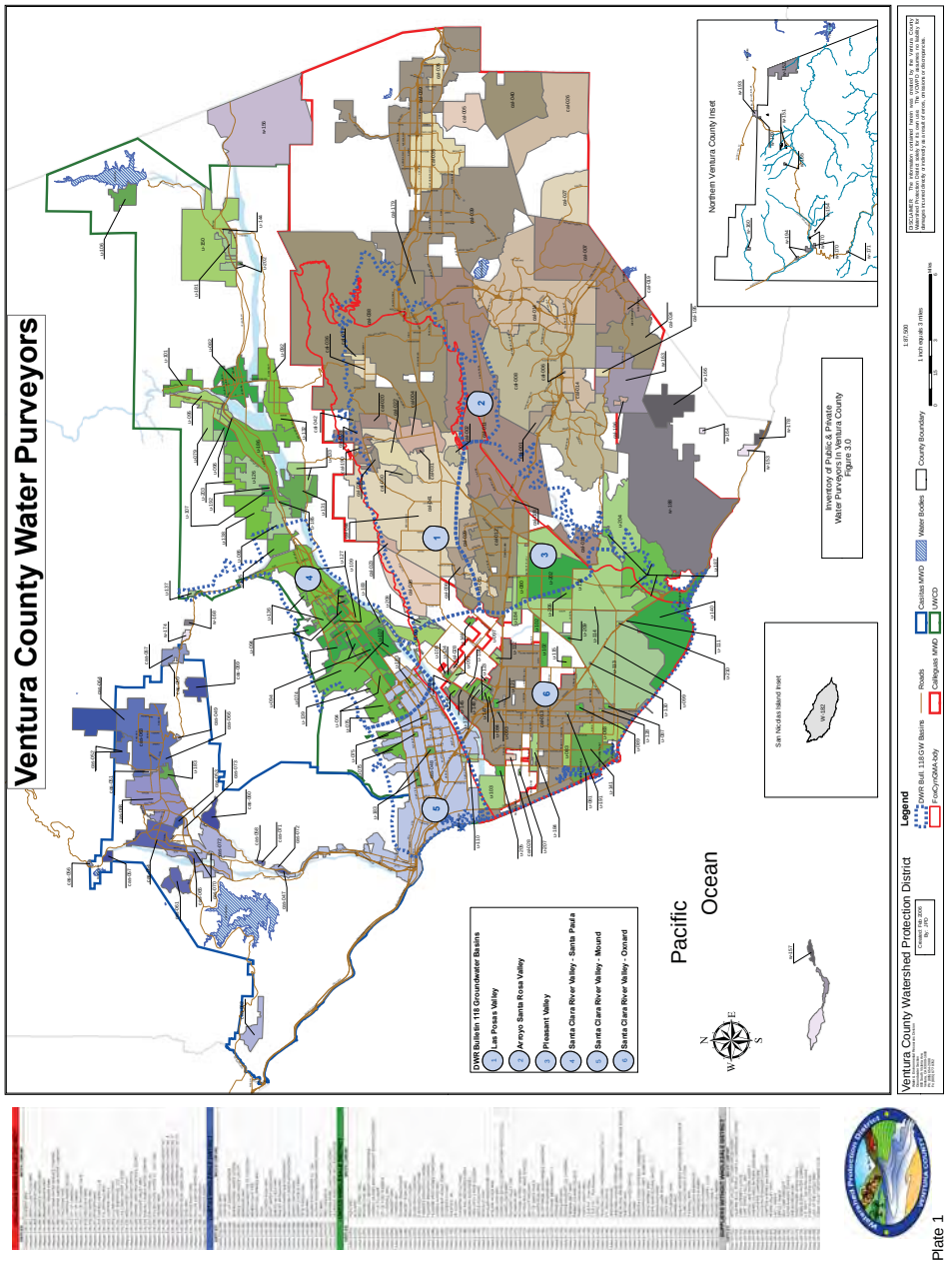


Figure 1. Location map of Fox Canyon Groundwater Management Agency boundary.

The Annotated California Codes Water Appendix, Chapter 121-102 et seq. required the FCGMA to develop, adopt, and implement a plan to control groundwater extractions from the Upper Aquifer System (UAS) to achieve a balanced water supply and demand in the Upper Aquifer System by the year 2000. Additionally, the Water Code required the FCGMA to adopt a Lower Aquifer System (LAS) Management Plan for future extractions from the Lower Aquifer System, including a policy for issuing well permits and a Contingency Plan for seawater intrusion into the Lower Aquifer System. The FCGMA adopted its original Groundwater Management Plan in 1985. The original FCGMA Groundwater Management Plan specified several major items or tasks for accomplishment.



At the time of the initial Management Plan development in 1984-1985, the primary threat to the aquifers of western Ventura County was seawater intrusion in the Upper Aquifer System. Since that time, a number of studies have identified other water quality problems, including saline intrusion in the Lower Aquifer System (LAS) in the Pleasant Valley basin, and in the Las Posas basin. This update to the groundwater management plan is designed to look at a broader range of problems and to suggest potential solutions to these problems.

Since 1985, there have been a number of studies conducted within the FCGMA, the most comprehensive being the Regional Aquifer System Analysis (or RASA Study) done by the U.S. Geological Survey (USGS) in the late 1980s and 1990s. This study, conducted with the cooperation of local agencies, consisted of drilling monitoring wells with individual casings perforated in selected aquifers or water-bearing zones, constructing a groundwater model, and conducting hydrogeologic studies. Monitoring wells, most constructed along the coastline of the Oxnard Plain, continued to provide critical information on the status of saline intrusion. In addition, a number of more specific or follow-up studies have been conducted by the United Water Conservation District (UWCD) and other agencies. These studies have helped characterized seawater intrusion along the coastline, saline contamination in more inland areas, and nitrate contamination in the Upper Aquifer System. The USGS MODFLOW groundwater model has been used and refined by the groundwater staff at UWCD to test a variety of projects that could help mitigate the water quality problems within the FCGMA.

This 2007 Update to the FCGMA Groundwater Management Plan incorporates all previous work and the specific studies that were undertaken as part of this most-recent planning process. The Plan is organized with the results of past and current studies followed by an evaluation of both current management strategies and potential future management strategies for the FCGMA. Various groundwater management ideas and strategies have been evaluated first by FCGMA staff, and UWCD staff, and then reviewed by Calleguas Municipal Water District (CMWD) management and staff and consultants from the water purveyors within the FCGMA. Extensive public review by stakeholders was also a critical part of the planning process.

Appendix C includes a document entitled, the East Los Posas Basin Management Plan (ELPBMP). The ELPBMP was developed through ongoing discussions between CMWD and the Las Posas Basin Users Group (farm well owners, mutual water companies, and the Ventura County Water Works Districts that supply water to the City of Moorpark and others). The ELPBMP serves as a more detailed sub-basin management planning document grounded in the FCGMA February 23, 1994 approval of CMWD's Application for Injection/Storage Facilities in the North Los Posas Groundwater Basin. (Appendix C - Exhibit A). As such, the ELPBMP particularly addresses the interaction of CMWD's Aquifer Storage and Recovery (ASR) project with other basin pumpers regarding both basin-wide and local effects of the project.

2.0 BACKGROUND OF GROUNDWATER MANAGEMENT AND OVERDRAFT WITHIN THE FCGMA

Although high chloride levels were first documented near Port Hueneme in the 1930s (California Department of Water Resources [DWR], 1954), the conditions for widespread seawater intrusion on the Oxnard Plain were initiated as early as the 1940s, when groundwater levels beneath the southern portion of the Oxnard Plain basin dropped below sea level (see Appendix A). Within 5 to 10 years, chloride concentrations in wells in the Port Hueneme area started to increase rapidly. At that time, seawater had only affected a few wells in the Port Hueneme area, encompassing an area less than one square mile (Appendix A).

Within 20 years, seawater intrusion in the Port Hueneme area had extended as much as 3 miles inland. In some of the affected wells, chloride concentrations were as high as those of seawater (just less than 20,000 mg/L). Appendix A documents the progression of seawater intrusion beneath the southern portion of the Oxnard Plain basin. This seawater intrusion into the Upper Aquifer System was located adjacent to the Hueneme Submarine Canyon that is directly offshore of Port Hueneme (Figure 2). Seawater intrusion also occurred in the Point Mugu area, adjacent to the Mugu Submarine Canyon that extends offshore from Mugu Lagoon. This intrusion in the Point Mugu area first impacted Upper Aquifer System wells in late 1950s (Appendix A).

In the Port Hueneme area, seawater in the Upper Aquifer System reached its farthest point inland in the early 1980s (Appendix A). Following the high rainfall year of 1983, chloride levels began to decrease in many of the Port Hueneme area wells perforated in the UAS. Coupled with pumping allocations and management strategies imposed by the FCGMA, this improving trend in chloride reductions was accelerated in the 1990s, as the Freeman Diversion was completed by UWCD and several wet years occurred, which allowed increased recharge available from the diversion, helping restore aquifer pressures and pushing seawater back toward the coast.

Groundwater levels in the Lower Aquifer System also dropped below sea level in the late 1950s. This Lower Aquifer System intrusion was first detected in wells in the late 1980s (Appendix A). As with the Upper Aquifer System, the intrusion in the Lower Aquifer System spread into the aquifer both near Port Hueneme and at Point Mugu. Further exacerbating the drops in groundwater levels in the LAS was an increase in production in the Lower System – partly in search of better quality water supplies and partly because new or replacement wells were required to be drilled in the LAS as a strategy to lessen pumping in the intruded Upper Aquifer System.

The overpumping of the aquifers that led to seawater intrusion also created land subsidence of up to 2.2 feet in the Pleasant Valley area north and northwest of Mugu Lagoon by the early 1970s as dewatered clay layers between aquifer zones collapsed from reduced hydrostatic pressures. This subsidence is permanent – refilling of the sand and gravel aquifers cannot force water back into the dewatered clay layers.

In the Point Mugu area (Figure 2), chlorides have not lessened over the past two decades. Instead, chloride concentrations continued to increase in the area of Mugu Lagoon, reaching concentrations almost as high as seawater in some wells. The CM1A monitoring well in that area showed an increase in chloride concentrations from several hundred mg/L to 4,600 mg/L in a little more than one decade.

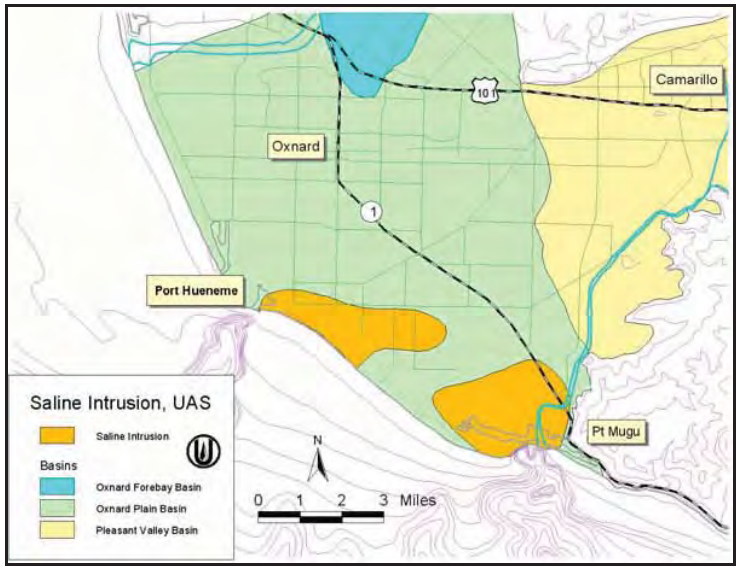


Figure 2. Areas of saline intrusion beneath the Oxnard Plain basin in 2006. The sources of the saline intrusion are discussed in section 5.1.1 *Seawater Intrusion*.

As the USGS began their work in Ventura County in late 1980s, they proposed that the increase in chlorides in the UAS and LAS was caused not just from seawater intrusion but also from the intrusion of saline waters being pulled from surrounding sediments and from deeper depths along fault zones (Izbicki, 1991, 1992; discussed in more detail in section 5.1.1 *Seawater Intrusion*). The cause of this additional saline contamination was the same as for seawater intrusion, that is, very low groundwater levels. This additional saline contamination of groundwater inland from the lobes of seawater intrusion was caused by excessive groundwater pumping and lowered groundwater levels. This finding raised the possibility that saline contamination could occur in inland areas wherever groundwater levels are particularly depressed.

There was some initial concern chloride concentrations measured in some of the producing wells were simply detecting high chloride waters flowing downward from failed well casings. To ensure monitoring results were accurately depicting saline intrusion, a series of monitoring wells were drilled along the coastal portions of the Oxnard Plain. These multiple-completion wells consist of a single well bore containing several smaller-diameter PVC wells completed at varying aquifer depths. These monitoring wells give discrete depth-dependent data from the aquifers and form the basis of much of the current monitoring program.

Several trends in saline intrusion are evident on the south Oxnard Plain. The Port Hueneme lobe of seawater intrusion has decreased considerably in size and chloride concentration in the

Upper Aquifer System. However, Lower Aquifer System chloride concentrations have somewhat increased in this Port Hueneme lobe. In the more southeastern Point Mugu lobe, concentrations of chloride are generally higher than in the past both in the UAS and LAS; the areal extent of the intrusion of seawater is not known with precision. The area affected by saline intrusion from surrounding sediments has increased both in size and in chloride concentration. This increase in size has prompted United Water Conservation District to drill new monitoring wells inboard of this saline intrusion to detect further movement of salts.

Local and State Actions – The increasing seawater intrusion prompted the State Water Resources Control Board to consider adjudication in the early 1980s, with the result that local agencies, working with the State Board, created a series of physical solutions and institutions to tackle the problem. The physical solutions included adding artificial recharge capability for the aquifers and providing additional in-lieu surface water to groundwater pumpers. The institutional solution was the formation of the Fox Canyon Groundwater Management Agency to bring water usage into balance with recharge sources to prevent overdraft conditions.

Formation of the Fox Canyon Groundwater Management Agency – In 1982, State Senate Bill 2995 was approved creating the Fox Canyon Groundwater Management Agency (FCGMA). The agency's activities were defined as "planning, managing, controlling, preserving, and regulating the extraction and use of groundwater within the territory of the agency." That directive also went on to say, "shall not involve itself in activities normally and historically undertaken by its member agencies, such as the construction and operation of dams, spreading grounds, pipelines, flood control facilities, and water distribution facilities, or the wholesale and retail sale of water." This prohibition of water conservation and distribution facilities along with water sales by the FCGMA was clearly meant to delineate the separate powers of the various agencies within the County (see following section).

The FCGMA officially began operations on January 1, 1983 with the County of Ventura contracting to provide staffing and related services to the new agency. In May 1983, Ordinance No. 1 was adopted requiring all wells within the agency to register and begin reporting groundwater extractions. This ordinance also set extraction management fees (at $0.50/AF), becoming the sole source of income to the fledgling agency sans any minor penalty or surcharge fees that would be instituted in later ordinance revisions. Ordinance No. 2 (October 1983) was a short amendment to Ordinance No. 1 establishing semi-annual groundwater extraction reporting to cover the first and second half of each calendar year, with statements due within 30 days following each period.

A groundwater management plan was adopted in 1985 to set goals and to help guide FCGMA policies. In February 1987, Ordinance No. 3 was adopted to require flow meters on all but domestic wells. Ordinance No. 4 (July 1987) soon followed that protected the aquifer outcrop areas in the East and West Las Posas basin (formerly collectively referred to as the North Las Posas basin) and regulated groundwater extractions in the basin via more detailed rules than those in any previous ordinance. The adoption of Ordinance No. 5 in August 1990 completed the first steps for the FCGMA by setting up a system of scheduled extraction reductions, allowing for the use of Historical, Baseline, and Agricultural Efficiency Allocations, and establishing a credit system to encourage cutbacks in pumping, along with a penalty system for overpumping beyond the established annual allocation.

Agencies' responsibilities - Several agencies are responsible for managing water resources in Ventura County. The FCGMA has responsibility for groundwater management planning, managing pumping allocations and credits, and developing policies related to groundwater

extractions and recharge. United Water Conservation District (UWCD) has responsibility for managing groundwater resources in seven basins in the county, including most of the basins within the Fox Canyon Groundwater Management Agency (FCGMA) (Plate 1). UWCD's responsibilities include groundwater and surface water monitoring, constructing and maintaining water conservation and recharge facilities, reporting on groundwater conditions, and groundwater management and planning activities. Groundwater management and planning functions overlap between the FCGMA, UWCD, and other local agencies, with the FCGMA focusing on extractions and policy and UWCD focusing on planning and implementing projects. Calleguas Municipal Water District (CMWD) is responsible for providing State Water to portions of Ventura County and providing water management strategies to ensure a reliable source of water for its customers (Plate 1). The Ventura County Watershed Protection District (VCWPD) is responsible for flood control functions, groundwater/surface water monitoring, and water well permitting. The water purveyors (cities and water districts) decide how much and from where their groundwater supplies are extracted, as well as plan projects that benefit the aquifers. There has been a remarkable amount of cooperation among these organizations in addressing groundwater issues over the last 20+ years.

In practice, groundwater management functions within the boundaries of the FCGMA are performed in the following ways:

1. Groundwater levels and groundwater quality sampling and analysis are conducted by UWCD, VCWPD, and individual water purveyors;
2. Groundwater extraction records are collected by both the FCGMA and UWCD, with the FCGMA maintaining records on extraction allocations and credits;
3. An annual report on groundwater conditions is prepared by UWCD within UWCD boundaries and CMWD prepares reports on groundwater conditions within the West, East, and South Las Posas basins (in conjunction with the Las Posas Basin Users Group;
4. Water purveyors prepare regular plans on current and future water use and supplies (e.g., Urban Water Management Plans);
5. The FCGMA prepares this Groundwater Management Plan to evaluate basin management objectives, strategies, and policies;
6. UWCD and some of the water purveyors construct and operate water conservation facilities; and
7. The VCWPD (and the City of Oxnard within its boundaries) oversees all well drilling, well destruction, and monitoring well requirements and permitting.

The initial Groundwater Management Plan (September 1985) prepared by the FCGMA recommended groundwater pumping be reduced by 25% over a 20-year period to help bring the aquifers into balance or to reach safe yield by year 2010 and to mitigate seawater intrusion by that same target date. This plan was based on groundwater demand projections for the period between 1980 and 2010. Subsequent Board ordinances (Ordinance No. 5) formulated an extraction allocation for all groundwater pumpers within the FCGMA, based on average extractions during the years 1985 to 1989. Starting in 1990, these pumping or "Historical" allocations were to be reduced by 5% every five years, with a planned 25% total reduction by the year 2010.

A program of "Conservation" and "Storage" credits allows well operators to vary their annual pumping in accordance with crop changes and/or annual hydrologic conditions. In addition, agricultural pumpers are allowed the option of using Irrigation Efficiency instead of the allocation/credit program. Agricultural efficiency for individual pumpers (later deemed as

"operators" of one or more wells) is required to be at least 80% or better (20% or less going to leaching, deep percolation, or runoff), when compared to FCGMA allowed water for particular crop water demand based on daily evapotranspiration and precipitation measurements from a series of weather stations installed throughout the FCGMA. A surcharge fee, based on the extraction reporting, was formulated to penalize individual pumping above allowed annual allocations or not meeting the required irrigation efficiency percentage minimum. These penalties have been seldom used since their inception, largely because of widespread cooperation among pumpers to reduce groundwater extractions.

In cooperation with the Watershed Protection District, the FCGMA also helped formulate requirements that new wells be completed in specific aquifers to help control seawater intrusion. A similar cooperative program that utilized Federal 319(h) grant funds coupled with matching local funds helped destroy a number of abandoned wells across the Oxnard Plain which, had the potential to act as conduits allowing inter-aquifer mixing. A total of 49 old abandoned or leaking wells were destroyed under this program.

3.0 GROUNDWATER BASINS & HYDROGEOLOGY

The basins within the FCGMA are part of the Transverse Ranges geologic province, in which the mountain ranges and basins are oriented in an east-west rather than the typical northeast-southwest trend in much of California and the western United States. Active thrust faults border the basins of the Santa Clara River, causing rapid uplift of the adjacent mountains and downdropping of the basins. The alluvial basins are filled with substantial amounts of Tertiary and Quaternary sediments deposited in both marine and terrestrial (non-marine) settings. The basins beneath the Oxnard Plain are filled with sediments deposited on a wide delta complex formed at the terminus of the Santa Clara River and was heavily influenced by alternating episodes of advancing or retreating shallow seas that varied with world-wide sea level changes over many millions of years.

There are seven main or significant groundwater basins within the FCGMA (Figure 3). These groundwater basins have been called by somewhat different names historically; this Plan uses the terminology of the U.S. Geological Survey from their work in the 1990s and early 2000s (e.g., Hanson et al., 2003) because it is the most recent comprehensive study of the basins. These groundwater basins include the Oxnard Plain, the Oxnard Plain Forebay, the Pleasant Valley, the Santa Rosa, and the East, West and South Las Posas basins. These basins generally contain two major aquifer systems, the Upper Aquifer System (UAS) and the Lower Aquifer System (LAS). Separate aquifers locally named within these systems include the Oxnard and Mugu aquifers (UAS) and the Hueneme, Fox Canyon, and Grimes Canyon aquifers (LAS). A shallower, unconfined aquifer is also present locally underlying rivers and creeks. Underlying the Oxnard Plain and Pleasant Valley basins are sand layers of the "semi-perched zone," which may locally contain poor-quality water. This zone extends from the surface to no more than 100 ft in depth. These sands overlie confining clay of the upper Oxnard Aquifer which generally protects the underlying aquifers from contamination from surface land uses. The Semi-perched zone is rarely used for water supply.

The aquifers are comprised of sand and gravel deposited along the ancestral Santa Clara River, within alluvial fans along the flanks of the mountains, or in a coastal plain/delta complex at the terminus of the Santa Clara River and Calleguas Creek. The aquifers are recharged by infiltration of streamflow (primarily the Santa Clara River), artificial recharge of diverted streamflow, mountain-front recharge along the exterior boundary of the basins, direct infiltration of precipitation on the valley floors of the basins and on bedrock outcrops in adjacent mountain

fronts, return flow from agricultural and household irrigation in some areas, and in varying degrees by groundwater underflow from adjacent basins.

LOWER AQUIFER SYSTEM – The Lower Aquifer System (LAS) consists of the Grimes Canyon, Fox Canyon, and Hueneme aquifers (e.g., Figure 6) from the deepest to the shallowest. The LAS is part of the Santa Barbara, San Pedro, and Saugus formations of Plio-Pleistocene age (Hanson et al, 2003). The lowest water-bearing unit of the East Las Posas and Pleasant Valley basins is commonly referred to as the Grimes Canyon aquifer (California Department of Water Resources, 1954; Turner, 1975). The Fox Canyon aquifer underlies all of the groundwater basins beneath the FCGMA, but is most significant in the East and West Las Posas, Pleasant Valley, Oxnard Plain Forebay, and Oxnard Plain basins. The Hueneme aquifer is considered to underlie most coastal areas of the southern Oxnard Plain (Hanson et al, 2003), and is an important source of water in the Oxnard Plain, Pleasant Valley, and the West Las Posas basins.

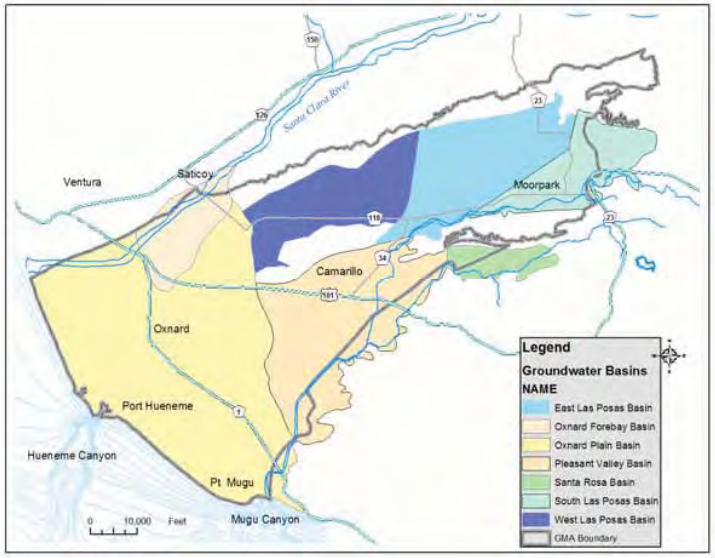


Figure 3. Groundwater basins within the Fox Canyon Groundwater Management Agency.

The aquifers within the LAS are commonly isolated from each other vertically by low-permeability units (silts and clays) and horizontally by regional fault systems. There is active tectonism (faulting and folding) within the area of the FCGMA, caused by compressional and lateral forces as the Transverse Ranges are caught in a vise between the Pacific and North American tectonic plates. As a result, the LAS is folded and tilted in many areas, and has been eroded along an unconformity separating the Upper and Lower aquifer systems.

UPPER AQUIFER SYSTEM – The Upper Aquifer System (UAS) within the FCGMA consists of the Mugu and Oxnard aquifers (Figure 5, Figure 6), from deepest to most shallow, of Late Pleistocene and Holocene age. The UAS rests unconformably on the Lower Aquifer System, with basal conglomerates in many areas (Hanson et al, 2003). In the Oxnard Plain, these coarse-grained basal deposits have been referred to as the Mugu aquifer (Turner, 1975). The Mugu aquifer is generally penetrated at a depth of 255 ft to 425 ft below land surface. The younger Oxnard aquifer is present throughout the Oxnard Plain. The Oxnard aquifer is the primary aquifer used for groundwater supply on the Oxnard Plain. This highly-permeable assemblage of sand and gravel is generally found at a depth of approximately 100 ft to 220 ft below land surface elevation.

OXNARD PLAIN FOREBAY AND OXNARD PLAIN BASINS – Both Upper and Lower aquifers are present in the Oxnard Plain Forebay and Oxnard Plain basins (Figure 4). The Oxnard Plain basin extends several miles offshore beneath the marine shelf, where outer edges of the aquifer are in direct contact with seawater. In areas near Port Hueneme and Point Mugu where submarine canyons extend nearly to the coastline (Figure 2, Figure 7), the fresh-water aquifers are in direct contact with seawater only a short distance offshore.

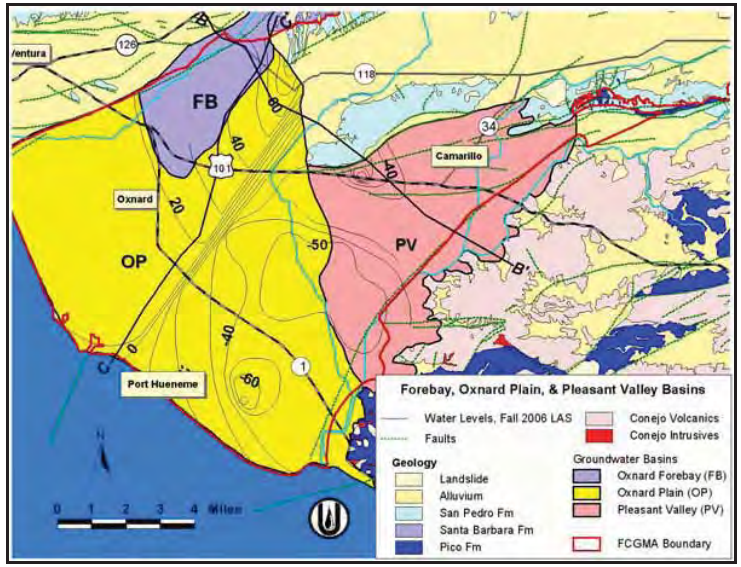


Figure 4. Map of Oxnard Forebay, Oxnard Plain, and Pleasant Valley basins. Contours of Lower Aquifer groundwater elevations in the Fall of 2006 indicate that the south Oxnard Plain and Pleasant Valley basins have significant areas below sea level. The locations of geologic sections B-B' (Figure 5) and C-C' (Figure 6) are indicated on map.

The Oxnard Plain Forebay basin is the main source of recharge to aquifers beneath the Oxnard Plain. The absence of low-permeability confining layers (no continuous clay or silt layers)

between surface recharge sources and the underlying aquifers (sand and gravel layers) in the Forebay basin allows for effective recharge of the basin and subsequent recharge of aquifers further to the south and southwest (e.g., Figure 6). Recharge to the Forebay basin comes from a combination of percolation of Santa Clara River flows, artificial recharge from United's spreading grounds at Saticoy and El Rio, agricultural and household irrigation return flows, percolation of rainfall, and lesser amounts of underflow from adjacent basins. In the area of the Forebay between the El Rio and Saticoy spreading grounds, the Lower Aquifer System has been folded and uplifted and then truncated (eroded away) along its contact with the Upper Aquifer System (Figure 5, Figure 6). In this area, recharge from surface sources may enter both the Upper Aquifer System and the underlying Lower Aquifer System. It is estimated that about 20% of the water recharged to this area reaches the Lower Aquifer System, with the remainder recharging the Upper Aquifer System (Hanson, 1998).

The Oxnard Plain Forebay basin accepts large quantities of recharge water in a single year, and the basin was filled to near-capacity during several recent wet years (UWCD, 2003). High groundwater elevations in the Oxnard Plain Forebay basin increase the hydraulic head (pressure) in the confined aquifers of the Oxnard Plain, raising water levels throughout the Plain and promoting natural offshore flow in coastal areas.

The Oxnard Plain Forebay basin is hydrologically connected with the aquifers of the Oxnard Plain basin (e.g., Figure 6). Thus, the primary recharge to the Oxnard Plain basin is from underflow from the Forebay rather than the deep percolation of water from surface sources on the Plain. When groundwater levels are below sea level along the coastline, there may also be significant recharge by seawater flowing into the aquifers (from the historic discharge areas shown in Figure 7 where the aquifers are exposed on the sea floor). When Lower Aquifer System (LAS) water levels are substantially lower than Upper Aquifer System (UAS) water levels (creating a downward gradient), there may be substantial leakage of UAS water into the LAS both through discontinuities within the silts and clays between aquifers on the Oxnard Plain and as slow vertical percolation directly through the silt and clay material itself. Some amount of downward percolation can also occur via wells that are perforated in both aquifer systems and via compromised (failed or leaking) well casings.

One of the more recent findings associated with groundwater beneath the Oxnard Plain basin is a zone with a steeply-dipping groundwater gradient in the Lower Aquifer System that extends across the Oxnard Plain from just south of Port Hueneme northeastward to the south flank of the Camarillo Hills (Figure 4, just south of section C-C'). This steep gradient is apparently caused by a lower-conductance zone that bisects the Oxnard Plain at the depth of the Lower Aquifer System (e.g., UWCD, 2003). This zone, likely a fault or other structural feature, reduces recharge flowing from the Oxnard Plain Forebay basin to the south Oxnard Plain and Pleasant Valley. This zone may be an extension of the Simi-Santa Rosa fault that extends along the southern flank of the Camarillo Hills. The presence of this subsurface feature that reduces groundwater flow also limits the effectiveness of management strategies that rely on groundwater flowing in the LAS from recharge areas in the Oxnard Plain Forebay basin to the south Oxnard Plain and to Pleasant Valley. This Management Plan proposes specific strategies to overcome this geologic hurdle to recharging the LAS in these southern areas of the FCGMA.

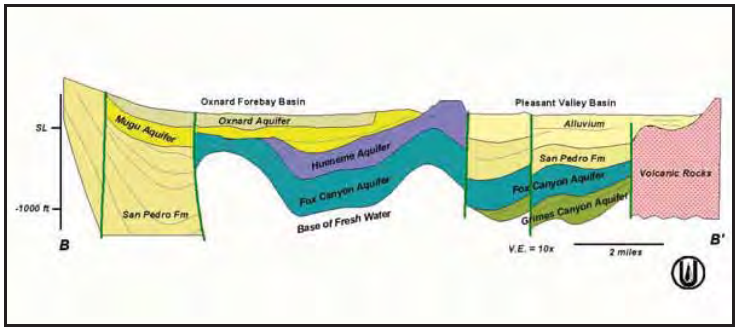


Figure 5. Geologic section B-B'. Simplified from Mukae and Turner (1975). Note ten times vertical exaggeration to accentuate stratigraphic units.

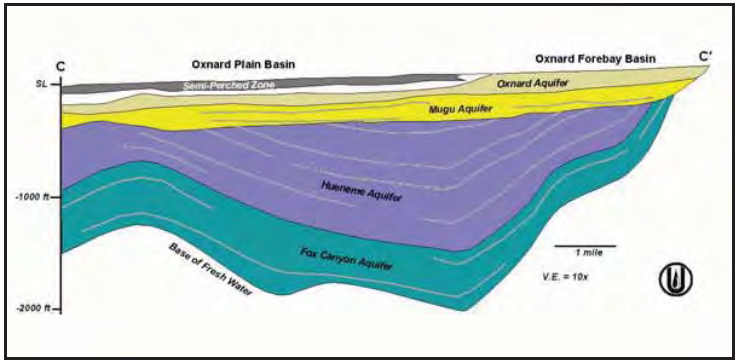


Figure 6. Geologic section C-C'. Simplified from Mukae and Turner (1975). Note ten times vertical exaggeration to accentuate stratigraphic units.

PLEASANT VALLEY BASIN – The Pleasant Valley groundwater basin (Figure 4) has been historically differentiated from the Oxnard Plain basin by a general lack of Upper Aquifer System aquifers (Turner, 1975). However, there may be local water-producing Upper Aquifer System units within the Pleasant Valley basin (Turner, 1975; Hanson et al, 2003). The Pleasant Valley basin is confined by thick fine-grained deposits overlying the aquifers of the basin. The Fox Canyon aquifer is the major water-bearing unit in the basin. Despite the fault barrier to the west, the Lower Aquifer System is in hydrologic continuity with the adjacent southern portion of the Oxnard Plain basin.

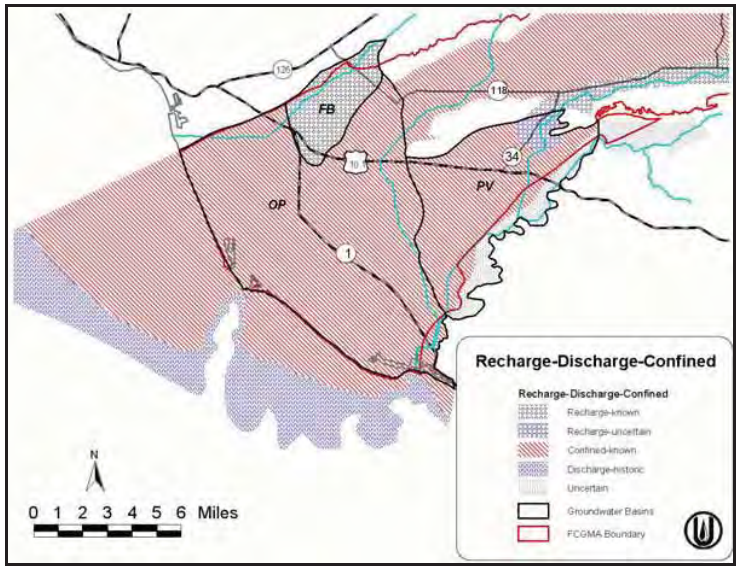


Figure 7. Recharge and discharge areas of coastal aquifers, with confined portions of the aquifers indicated. The offshore discharge area is the location where the aquifers are exposed on the ocean bottom and in submarine canyons. See text for discussion. Basin designations: OP-Oxnard Plain, FB-Oxnard Forebay, PV-Pleasant Valley.

Historically it was assumed that the LAS of the Pleasant Valley Basin was relatively confined and received little overall recharge across the fault that extends from the Camarillo Hills to Port Hueneme. However, since the early 1990s, water levels have begun to rise in the northern adjacent basins. The City of Camarillo has two existing wells in the northeast portion of the Pleasant Valley Basin (hereafter called the Somis Area) and these wells confirm that rising water levels in northern adjacent basins directly impact recharge rates, water quality, and water levels in the Somis Area. The recharge in the Somis Area may be a result of uplift and folding of Lower Aquifer units that allow rapid stream flow percolation. This area is indicated as "Recharge-uncertain" at the north end of the Pleasant Valley basin on Figure 7 to reflect the uncertainty of the extent of this area of recharge. It is recommended that additional monitoring and studies be conducted to determine the dimensions and nature of this apparent recharge area.

The groundwater hydrology of the portion of the Pleasant Valley basin east of the city of Camarillo is not well understood because there are not many wells drilled in the area. Along Calleguas Creek near California State University Channel Islands, water has been produced historically from aquifer depths that are shallower than the typical LAS well, suggesting that water-bearing strata are not limited to the LAS in this area.

It is clear that the eastern and northeastern portions of the Pleasant Valley basin need to be better understood (indicated as "Unknown" along the eastern edge of the Pleasant Valley basin on Figure 7). Past studies have considered the basin as largely confined, with perhaps some perched water along a portion of its eastern edge. The conceptual hydrogeology that was the basis for the Ventura Regional Groundwater Model used the conclusions from these studies. As suggested above, additional monitoring and studies are needed to better determine the hydrogeology of the area, with these results integrated into the groundwater model.

SANTA ROSA BASIN – The Santa Rosa basin (Figure 8) is the smallest basin within the FCGMA. Groundwater levels are heavily influenced by flows in the overlying Conejo Creek; discharges from a wastewater treatment plant and dewatering wells in Thousand Oaks have considerably increased year-round flows in the creek. Aquifers in the basin include a shallow alluvium aquifer and portions of the Lower Aquifer System. The structure of this basin is dominated by the east-trending Santa Rosa syncline that folds the San Pedro and Santa Barbara Formations (CSWRB, 1956). This syncline helps direct groundwater flow in the San Pedro Formation. The Santa Rosa fault zone forms a barrier to groundwater flow into the basin from the north. A sharp change in water level in the western part of the basin may be caused by a roughly north-trending fault that restricts groundwater flow (CDWR, 2003). Elevated nitrate and sulfate have been a problem in the basin.

LAS POSAS BASIN –The Las Posas groundwater basin (Figure 8) is bounded on the south by the Camarillo and Las Posas Hills and on the north by South Mountain and Oak Ridge (CSWRB, 1954). The basin has been variously subdivided into North and South basins (e.g., Turner and Mukae, 1975) or by West, East, and South basins (e.g., Hanson, 1998). The U.S. Geological Survey terminology (Hanson, 1998) is used in this Management Plan. Productive aquifers in this basin include a shallow unconfined aquifer that is most transmissive along the Arroyo Las Posas and a lower confined aquifer system that is considered to be the equivalent of the Lower Aquifer System on the Oxnard Plain (Figure 9).

South Las Posas Basin – This basin is separated from the East Las Posas basin by an east-trending anticline (fold) that affects all but the shallowest alluvium (Figure 9). This fold may affect groundwater flow between the East and South Las Posas basins at some aquifer depths, although recharge from the South Las Posas basin flows readily into the East Las Posas basin at Lower Aquifer System (LAS) depths. To the south, the Springville and Santa Rosa fault zones produce disrupted and tightly folded rocks along the edge of the basin, restricting groundwater flow to the south (CSWRB, 1956). There is a shallow alluvial aquifer that follows the trend of Arroyo Las Posas as it crosses the South Las Posas basin; this shallow aquifer is in hydrologic connection with the underlying LAS and is the main source of recharge to the LAS (indicated as the recharge area along the south edge of the East and South Las Posas basins on Figure 10).

There has been a significant change in average groundwater levels over the past 40 years in the South Las Posas basin, with groundwater levels rising more than 100 ft during this period. The mechanism for this rise in groundwater elevations is the increased recharge from percolation beneath the Arroyo Las Posas as discharges from the Moorpark and Simi Valley wastewater treatment plants and dewatering wells in Simi Valley have increase year-round flow in the arroyo. The entire alluvial aquifer near the arroyo has progressively filled to the elevation of the arroyo, starting in the easternmost portion of the basin in the 1960s and moving westward through the 1990s (Bachman, 2002). Water from the filled alluvial aquifer has percolated downward into the underlying Lower Aquifer System, creating a recharge mound in the Lower

Aquifer System that extends from the arroyo northward into the East Las Posas basin (CH2MHill, 1993; Bachman, 1999).

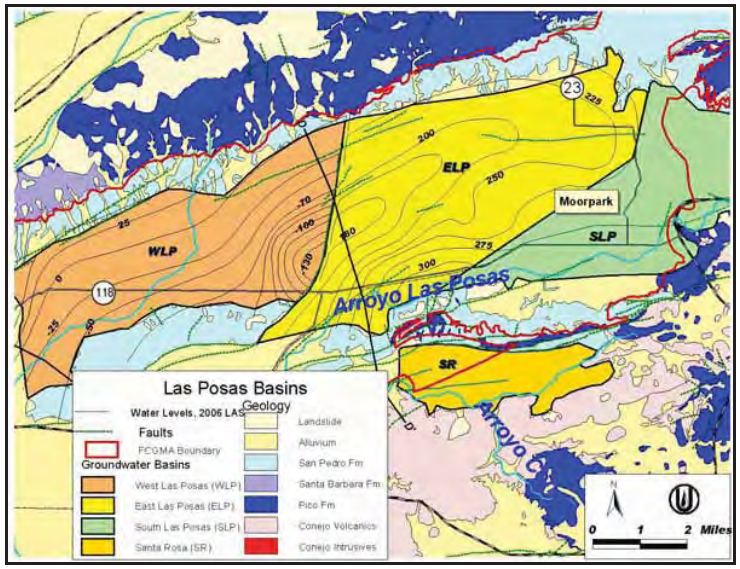


Figure 8. Map of Las Posas and Santa Rosa basins. Contours of Lower Aquifer groundwater elevations in 2006 indicate the recharge mound along Arroyo Las Posas and the change in groundwater elevations across the fault that forms the boundary between the West and East Las Posas basins. The location of geologic section D-D' (Figure 9) is indicated on the map.

Salts (i.e., chloride, sulfate) in the groundwater have increased in the South Las Posas basin and the southwestern portion of the East Las Posas basin as the shallow aquifer filled along Arroyo Las Posas. These salts apparently were leached from the shallow aquifer as groundwater levels reached record highs, saturating sediments that have been unsaturated for the historic period. These salts apparently migrated vertically with percolating groundwater into the LAS and then laterally into the main portion of the East Las Posas basin as the recharge mound developed. Some of this groundwater is unsuitable for irrigation without being blended with better-quality water.

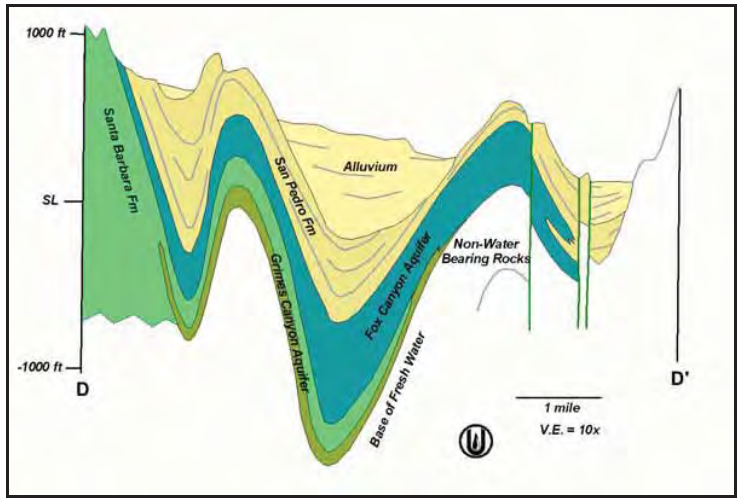


Figure 9. Geologic section D-D'. Simplified from Mukae and Turner (1975). Note ten times vertical exaggeration to accentuate stratigraphic units.

East Las Posas Basin – The East Las Posas basin is separated from the West Las Posas basin by a north-trending unnamed fault running through Somis (CH2MHill, 1993; Hanson, 1998), across which groundwater levels differ by as much as 400 feet (Figure 8). The fault also acts as a barrier to transport of saline waters from the East Las Posas basin to the West Las Posas basin (Bachman, 1999).

The source of recharge to the East Las Posas basin has changed significantly since urban development of the Simi Valley and Moorpark areas over the last 30 years. Prior to this time, recharge was predominantly from rainfall on outcrop areas and from percolation of winter floodwater along the Arroyo Las Posas. Geochemical studies show that groundwater in the central portion of the East Las Posas basin is hundreds to thousands of years old (Izbicki, 1996b), indicating a slow rate of historical recharge along the flanks of the basin. As discussed for the South Las Posas basin, urban development has brought increased discharges of both treated wastewater and shallow groundwater into Arroyo Las Posas, providing a year-round recharge source for the South and East Las Posas basins (CH2MHill, 1993; Bachman, 2002). This increased percolation from the arroyo has created a recharge mound that extends northward into the East Las Posas basin, where groundwater levels have risen by 125 ft to 200 ft during the past 30 years.

Conversely, pumping in the basin has resulted in falling groundwater levels in the eastern portion of the basin, away from the recharge mound. The largest drop in groundwater levels (190 ft) over the period 1973 to 1998 occurred in this region (Bachman, 1999). Groundwater levels have stabilized somewhat across the basin since the late 1990s, at least in part because of the addition of in-lieu and injected recharge by CMWD as part of the Las Posas Basin Aquifer Storage and Recovery (ASR) project.

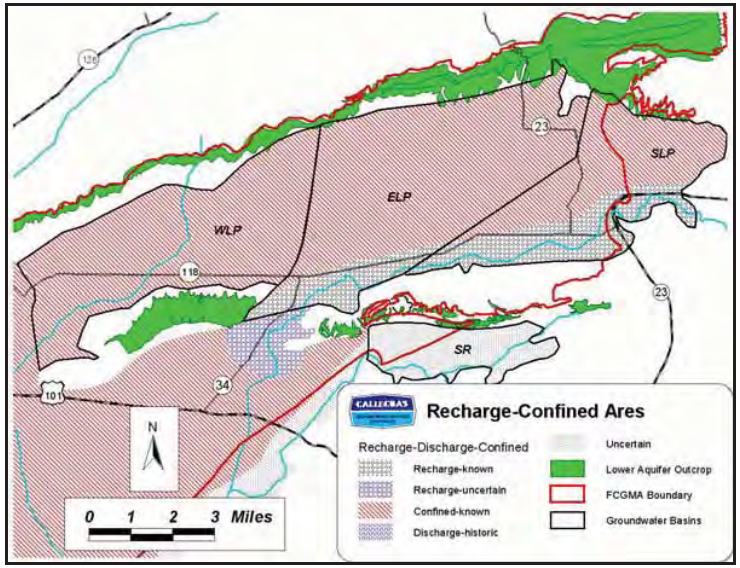


Figure 10. Recharge and discharge areas of Las Posas and Santa Rosa basins, with confined portions of the aquifers indicated. See text for discussion. Basin designations: WLP-West Las Posas, ELP-East Las Posas, SLP-South Las Posas, SR-Santa Rosa.

West Las Posas Basin – The West Las Posas basin (Figure 8) is isolated from the recharge sources of the East and South Las Posas basins by the north-south fault discussed in the previous paragraphs. Instead, the West Las Posas basin is hydrologically connected to the Oxnard Plain basin, with groundwater levels in the western portion of the basin rising and falling with wet and dry climatic cycles of recharge. Groundwater elevation contours are interpreted to extend continuously in the LAS from the Oxnard Plain basin into the West Las Posas basin, suggesting that there is no hydrologic boundary at the western end of the basin. Instead, the western boundary of the basin is defined by surface features – the end of the Las Posas Valley and the beginning of the flat terrain of the Oxnard Plain.

In the eastern portion of the basin, just to the west of the north-trending fault at Somis, a groundwater level trough that was 35 ft below sea level in 1973 had dropped to 150 ft below sea level by 1998 (the trough has since stabilized, with a slight rise in groundwater levels during the last several years). Groundwater elevations slope from their highest point at the western end of the basin to their lowest point at the eastern end of the basin, indicating that recharge water flows from the Oxnard Plain eastward into the basin. There is a flow component from the northern flank of the basin, suggesting that there is also significant mountain-front recharge.

4.0 GROUNDWATER EXTRACTIONS

The FCGMA has collected records of extraction for wells within the Agency for semi-annual periods since 1985. These extraction records are entered into a computer database, and individual wells that reported any pumping between 1985 and 1989 (known as the FCGMA "Base Period") have been assigned Historical Allocations based on those extractions. These extraction records are also used to calculate Conservation Credits and to determine pumping trends within the FCGMA.

Extractions vary from year to year (Figure 11) based largely on the amount (Figure 12) and patterns of rainfall for agricultural uses and the ratio of groundwater to imported water ordered by M&I providers in any year. This year-to-year variation makes it difficult to compare pumping from one year to the next without factoring in these climate and policy variations. However, now that there are historic records available that were gathered over at least a 20-year period, similar climatic years can be compared to determine general trends in pumping. For instance, a comparison of the dry years 1987 and 2002 (the two driest years during the 20-year period, Figure 12) indicates that overall reported pumping declined by about 37,000 acre-feet per year (164,700 to 127,700 AFY) within the Agency. Likewise, comparing average precipitation years 1988 and 2000 (Figure 12) indicates that reported pumping was reduced by 36,800 acre-feet per year (160,500 to 123,700 AFY).

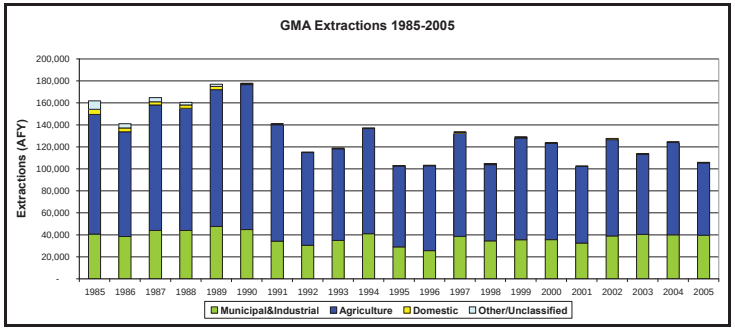


Figure 11. Reported extractions within the FCGMA for years 1985 to 2005.

This apparent decreasing trend in FCGMA pumping occurred in different fashions for agriculture and M&I. Agricultural pumping decreased earliest, following the end of the 1986-1991 drought. This decrease in agricultural pumping has also been documented by UWCD (2002) in a study of agricultural efficiencies within the FCGMA. The increased irrigation efficiency is likely the result of improved irrigation systems such as drip tape and micro sprinklers that were installed within that time frame. A portion of the decrease in agricultural pumping can also be attributed to land conversion to urban uses (see discussion below) and increased yields from the Freeman Diversion and the Conejo Creek project that supplied growers an alternative water source to pumped groundwater.

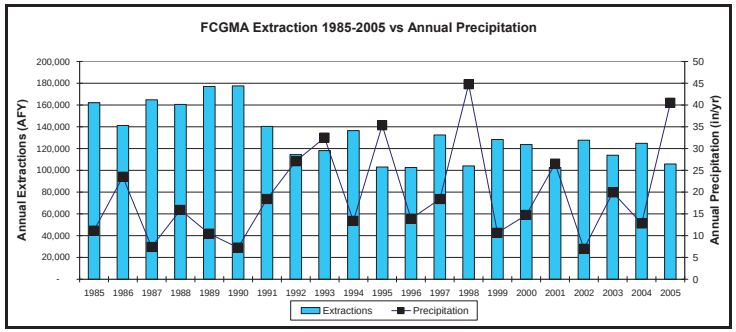


Figure 12. FCGMA extractions plotted against annual precipitation to indicate the general correlation between rainfall and extractions.

Municipal and Industrial (M&I) pumping is somewhat less affected by annual rainfall changes than agricultural irrigation. M&I pumping has been relative flat, with an average of 40,000 AFY pumped during the first decade of FCGMA reported pumping (1985-1994) and an average of 38,300 AFY pumping during the past five years (2001-2005). However, this flat pumping trend occurred as overall urban acreage increased (with an accompanying increase in potential water demand) as agricultural land has converted to urban use. An analysis of changes in land use during the period between aerial photos taken in 1998 and 2002 indicates that about 1,150 acres converted from agriculture to M&I in the Oxnard Plain and Pleasant Valley areas. At the FCGMA conversion rate of two AFY per acre, that represents about 2,300 AFY of new allocation to M&I during this four-year period.

5.0 WATER QUALITY ISSUES

Water quality issues are discussed in two parts: current issues that are evident today and potential future threats that could occur within the basins of the FCGMA if proactive steps are not taken now through management strategies.

5.1 CURRENT WATER QUALITY ISSUES

Seawater intrusion has long been the primary water concern within the FCGMA and was the problem for which the FCGMA was originally formulated to help fix. The intrusion occurs exclusively along the coastline in the Oxnard Plain basin. The U.S. Geological Survey also identified another type of saline intrusion on the Oxnard Plain – salts moving from the surrounding marine clays and older geologic units as pressure in the aquifers is reduced from overpumping. This type of intrusion may also be occurring on a minor scale in the Pleasant Valley basin. Chloride has also become a problem along Arroyo Las Posas, where groundwater from an area in the East and South Las Posas basins must be blended with lower-chloride water to meet irrigation suitability. This problem appears to have migrated downstream, with some of the City of Camarillo's wells now affected.

Chloride is also a problem in the Piru basin near the Los Angeles County line, where high chlorides from discharge of wastewater treatment plants along the Santa Clara River have

degraded the recharge water for the basin. This chloride problem is currently isolated to the Piru basin, although long-term recharge of poorer quality water could eventually move through the groundwater basins along the Santa Clara River and reach the Freeman Diversion.

High nitrate concentrations in groundwater are a localized problem in the Oxnard Plain Forebay and Santa Rosa basins. In and adjacent to the Forebay, nitrates affect drinking water wells of UWCD's Oxnard-Hueneme wellfield, mutual water companies, and the City of Oxnard, particularly during and following dry periods.

5.1.1 Seawater Intrusion

High chloride levels from intrusion of seawater were induced by lowered groundwater levels that formed a distinct pumping trough in the southern Oxnard Plain (Figure 13). In 1989, the U.S. Geological Survey initiated their Regional Aquifer-System Analysis (RASA) study in a cooperative effort with local agencies. As part of this and companion cooperative studies, a series of 14 nested well sites with three or more wells installed at each site, were drilled and completed at specific depths in the Oxnard Plain, Oxnard Plain Forebay, Pleasant Valley, and Las Posas basins (Densmore, 1996). Figure 14 shows the locations of the RASA well sites on the Oxnard Plain.

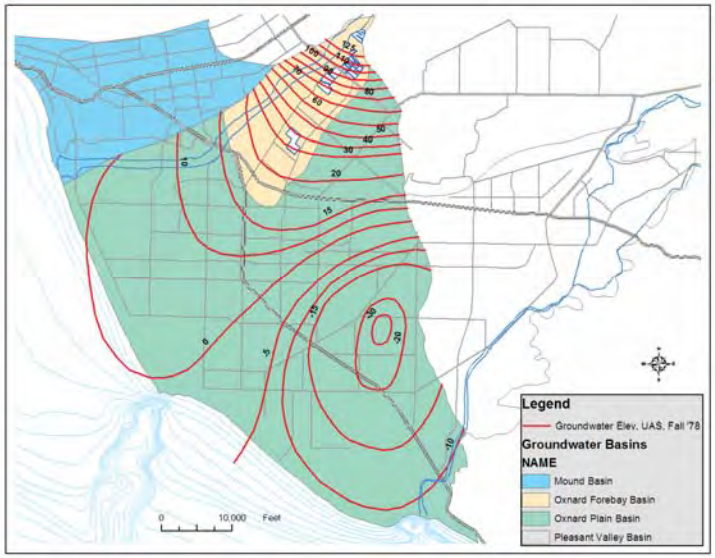


Figure 13. Groundwater elevations in the Upper Aquifer System in Fall 1978, indicating the large pumping trough in the south Oxnard Plain (water levels as much as 30 feet below sea level). This pumping trough, created by overpumping, pulled in seawater from the ocean.

Saline intrusion is recognized in monitoring wells by concentrations of chloride and Total Dissolved Solids (TDS) that are several times higher than the Basin Plan Objectives of 150

mg/L and 1,200 mg/L, respectively. In practice, the leading edge of the intrusion is mapped on the Oxnard Plain as the first occurrence of chloride in excess of 500 mg/L. In some wells that have been intruded, chloride exceeds 10,000 mg/L. The increase in chloride concentration has been rapid in some wells, increasing 1,000s of mg/L in a year or two.

Prior to the RASA study, it was believed an area extending from approximately 3 miles north of Port Hueneme to well SCE (near Highway 1) and south to Point Mugu was intruded by seawater. The installation of a dedicated monitoring network and detailed chemical analysis of water samples from the new wells and other wells yielded new interpretations on the extent of seawater intrusion on the Oxnard Plain. It is now known some areas of the southern Oxnard Plain are not intruded by seawater, but that high chloride readings from older production wells were the result of perched water leaking down failed well casings and contaminating the aquifer (Izbicki, 1992; Izbicki et al., 1995; Izbicki, 1996 a,b). As a partial result of these findings, many of the older wells on the Oxnard Plain have since been destroyed via a cooperative FCGMA-initiated program using Federal 319(h) grant money and matching funds contributed by the City of Oxnard, UWCD, FCGMA, and the County of Ventura. Figure 14 delineates the approximate extent of high-chloride water in the Oxnard aquifer (Upper Aquifer System). Figure 15 delineates the approximate extent of high-chloride water in the Lower Aquifer System.

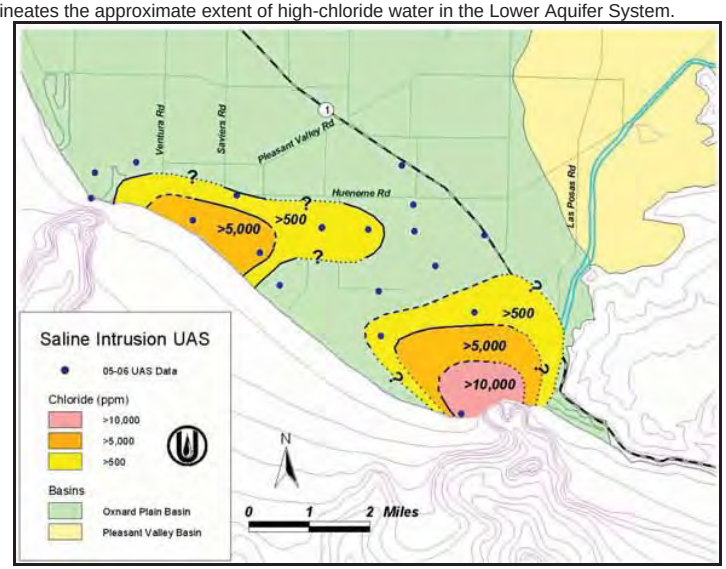


Figure 14. Areas of saline intrusion in the Upper Aquifer System of the Oxnard Plain in 2005-06. Contours of chloride concentrations indicate the maximum extent of the UAS saline intrusion – individual aquifers within the UAS may be less intruded. Contour lines are dashed where inferred and queried where uncertain. Bathymetric contour lines indicate the offshore submarine canyons where the aquifers are eroded along the canyon walls and exposed to seawater.

In addition to drilling and installing the nested monitoring wells, the USGS conducted geophysical surveys to determine the general extent of the high-saline areas (Stamos et al., 1992; Zohdy et al., 1993). This work indicated high-saline areas consisted of two distinct lobes,

with relatively fresh water separating the lobes (Izbicki, 1996a). The lobes identified by the USGS form the basis of the areas of high chloride concentration shown on UWCD maps.

Additional down-hole conductivity surveys by the USGS indicate the edges of the lobes are relatively distinct, with the first saline intrusion occurring in thin individual beds of permeable sand and gravel. As intrusion continues, more individual beds or geologic layers are impacted, resulting in increasing chloride levels within the affected aquifer. Thus, the interpretation of high-chloride areas shown on the maps combine measured concentrations from the monitoring wells, geophysical measurements, and study results about the nature of the intrusion front.

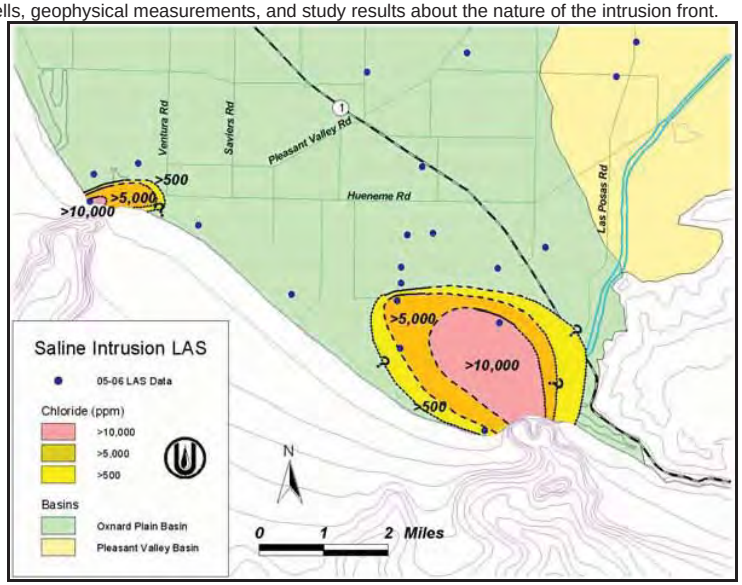


Figure 15. Areas of saline intrusion in the Lower Aquifer System of the Oxnard Plain in 2005-06. Contours of chloride concentrations indicate the maximum extent of the LAS saline intrusion – individual aquifers within the LAS may be less intruded. Contour lines are dashed where inferred and queried where uncertain. Bathymetric contour lines indicate the offshore submarine canyons where the aquifers are eroded along the canyon walls and exposed to seawater.

In addition to monitoring wells and geophysical measurements, isotope studies of groundwater samples from the nested wells indicate that the cause of the elevated chloride levels varies in the Oxnard Plain basin (Izbicki, 1991, 1992). Four major types of chloride degradation were documented:

Lateral Seawater Intrusion - the inland movement of seawater adjacent to the Hueneme and Mugu submarine canyons.

Cross Contamination - the introduction of poor-quality water into the fresh water supply via existing well bores improperly constructed or improperly destroyed, or via corroded casings caused by poor-quality water in the Semi-Perched zone.

Salt-Laden Marine Clays - the dewatering of marine clays, interbedded within the sand and gravel-rich aquifers and containing salts from their marine deposition, yields high concentrations of chloride-enriched water. This dewatering is the result of decreased pressure in the aquifers, caused by regional pumping stresses (excessive groundwater withdrawals).

Lateral Movement of Brines from Tertiary-Age Geological Formations - the lateral movement of saline water from older geologic formations caused by uplift along faults. An example is where older Tertiary rocks are in contact with younger aquifers across a buried fault face near Pt. Mugu.

5.1.2 Saline Intrusion from Surrounding Sediments

A significant portion of the salinity in the aquifers of the Oxnard Plain basin is coming from salts (primarily chloride) pulled from the surrounding sediments, as discussed in the previous section. When this saline intrusion occurs near the coastline, it largely resembles seawater intrusion in concentration and movement in the aquifer, and mitigation measures are similar to those for seawater intrusion (i.e., raising groundwater levels). In more inland areas such as the Pleasant Valley basin, chloride concentrations are generally less, with only a few wells showing any increase in chloride. It is too early to know whether chloride concentrations in the Pleasant Valley basin will escalate to a problem affecting local pumpers.

5.1.3 High Salinity Associated with High Groundwater Levels

Increased salt concentrations (chloride, sulfate, sodium) in aquifers underlying the Arroyo Las Posas in the East Las Posas, South Las Posas, and northern Pleasant Valley basins correspond in time with rising groundwater levels along the arroyo. This rise in groundwater levels has been created by increased recharge as natural streamflow was augmented by the addition of the upstream discharge of treated wastewater and aquifer dewatering projects along the arroyo. The shallow groundwater levels, which are higher than any historic levels, apparently leach salts from the previously unsaturated portions of the aquifer. The problem caused by high groundwater levels in the shallow aquifer has migrated down Arroyo Las Posas across the Las Posas basin and into the northern part of the Pleasant Valley basin, where water levels have risen and salts have increased. Solutions to this salinity problem will likely be based on removing and treating the high-salinity water.

5.1.4 Nitrate in Groundwater

High nitrates in groundwater primarily affect the Oxnard Plain Forebay and Santa Rosa basins. Nitrate is a primary drinking water standard (45 mg/L as NO3), so high nitrate concentrations directly affect the potable water supply. Nitrate is largely introduced into groundwater by man's activities in overlying recharge areas where the nitrate travels directly into the aquifers. Nitrate concentrations typically are a balance between nitrate input and the amount of recharge water available for dilution. Nitrate concentrations commonly increase during dry periods when there is less recharge water for dilution. In groundwater away from recharge areas, nitrates have generally been diluted and are at concentrations well below drinking water standards. An exception to this occurred in the 1990s, when nitrate occurred in City of Oxnard wells in the Oxnard Plain basin, just outside of the Forebay basin. This nitrate may have migrated downward from the Semi-Perched zone through improperly abandoned private wells.

The primary sources of nitrate are septic systems (especially if they are poorly maintained or being used above design capacity) and agricultural fertilizer. These are both being addressed.

As discussed below, septic systems have been prohibited in the Oxnard Plain Forebay basin. In addition, agricultural nitrate, contributed largely from fertilizers, will be monitored in 2006 as part of the Agricultural Irrigated Lands Conditional Waiver program adopted by the Los Angeles Regional Water Quality Control Board. If nitrates are shown to be entering groundwater from agricultural fertilizers through the monitoring program, the waiver requires the implementation of Best Management Practices.

5.2 WATER QUALITY ISSUES BY BASIN

5.2.1 Oxnard Plain Forebay Basin

The primary water quality concern in the Oxnard Plain Forebay basin is nitrate concentrations above the Department of Health Services' Maximum Contaminant Level. Nitrate concentrations in the Upper Aquifer System spike in the Forebay basin during dry periods when there is reduced recharge to the basin. Nitrate concentrations periodically exceed the primary drinking water standard of 45 mg/L (as NO3) in individual wells (Figure 16). Because much of the pumping in the Forebay delivers potable water through the Oxnard-Hueneme (O-H) pipeline (a potable water delivery line that provides groundwater to the cities of Oxnard and Port Hueneme), the drinking water standard is of prime importance. The O-H system has been able to deliver potable water by blending lower-nitrate water and by temporarily shutting down impacted high-nitrate wells.

These nitrates have been attributed to both agricultural activities (fertilizer application) and adjacent septic systems (leach-line effluent discharges). The nitrate problem will continue to be a water quality issue for drinking water wells as long as the sources of nitrate continue to contribute this mineral salt into the groundwater resources. As a result of the high nitrate concentrations, the Regional Water Quality Control Board enacted in 1999 a prohibition on septic systems in portions of the Forebay, with orders that most such disposal systems be eliminated from the Oxnard Plain Forebay basin before 2008. Since that time, disconnecting the nearby El Rio septic tanks and connecting to a sanitary sewer system has been a high priority water quality improvement project for the County.

5.2.2 Oxnard Plain Basin

The significant water quality issue in the Oxnard Plain basin is saline intrusion from both seawater and from surrounding marine sediments. Chloride degradation is directly related to groundwater levels in the basin. The water balance of the Oxnard Plain and the offshore component of the aquifer units is a dynamic balance between groundwater recharge, groundwater extraction, and change in aquifer storage. High groundwater levels in the recharge zone in the Oxnard Plain Forebay basin exert a positive pressure on the confined aquifers of the Oxnard Plain, and water flows from the recharge areas toward the coast (Figure 17). Whereas the pressure exerted by high water levels in the Forebay propagates rapidly through the aquifers, the actual movement of the water itself is slow, at approximately 3 feet per day or less in the Forebay (Izbicki et al, 1992). The pressure (piezometric) surface of the confined aquifer is diminished by the extraction of water from the system. If pressure heads at the coast fall below sea level, the lateral intrusion of seawater will occur. The dewatering of marine clays can occur if heads in the surrounding sediments remain below their historic levels for prolonged periods.

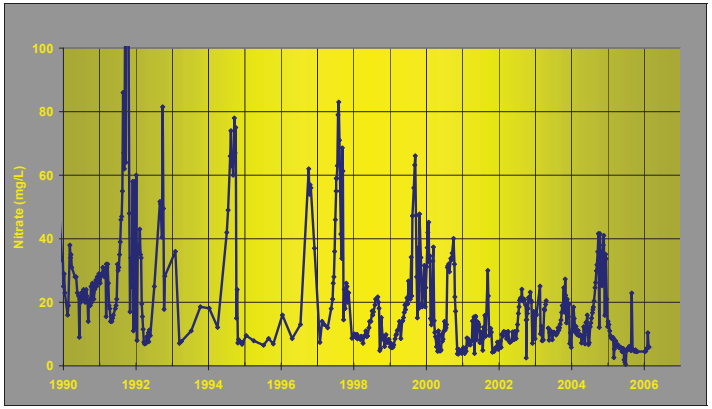


Figure 16. Nitrate concentrations (as NO3) in Oxnard-Hueneme El Rio well #5. Note that nitrate increases during dry portion of year, when nitrate input from overlying land uses is less diluted by low-nitrate recharge water. When nitrate levels are high, this well is either not used or the produced groundwater is diluted with low-nitrate water from other wells in the system.

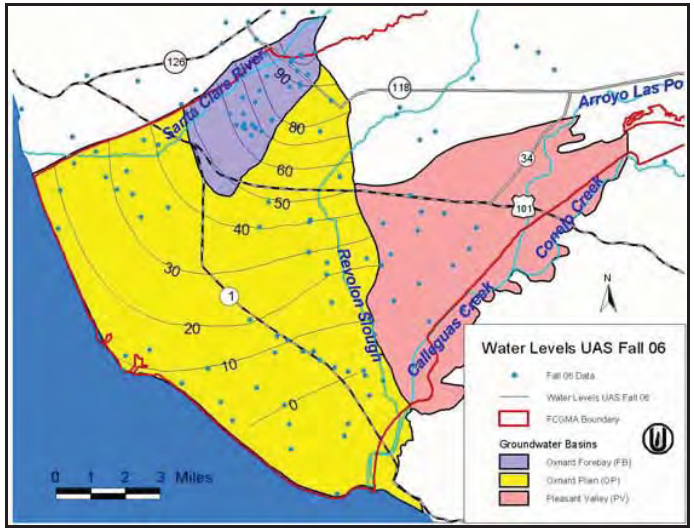


Figure 17. Groundwater elevation contours in the Upper Aquifer System, Fall 2006. Note that southeastern portion of Oxnard Plain remains below sea level (line labeled "zero") and is susceptible to continued seawater intrusion.

Chloride levels in coastal monitoring wells in the Upper Aquifer System show a direct relationship to groundwater levels – with groundwater levels below sea level, chloride levels increased in the early 1990s (e.g., well A1 in Figure 18). However, as the Freeman Diversion on the Santa Clara River began operation in 1991 and a series of wet years followed, the amount of recharge to the former pumping trough area and to the Port Hueneme area increased significantly. This has resulted in a rise in groundwater elevations on the Oxnard Plain and drastic reduction in seawater in some coastal monitoring wells (e.g., well A1 in Figure 18). In fact, the significantly intruded well A1 has returned to its pre-intrusion water quality levels and is currently (2006) within drinking water standards. This may be the first documented instance of such a reversal of seawater intrusion in a coastal basin.

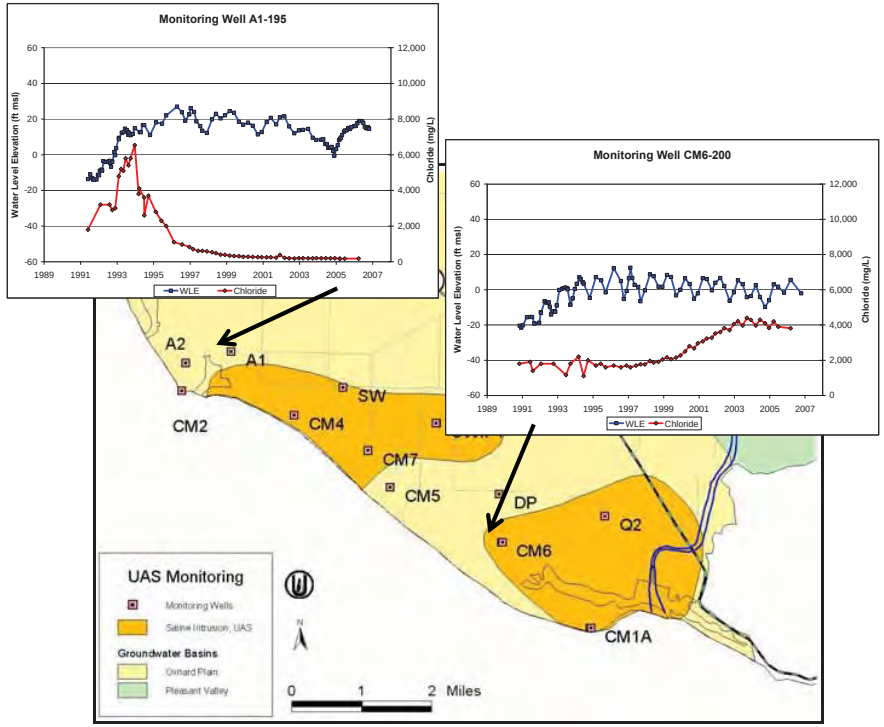


Figure 18. Chloride levels in two Upper Aquifer System coastal monitoring wells. Note that chloride levels have improved to drinking water quality in the A1 well (Port Hueneme lobe), whereas chloride levels continue to increase in the Point Mugu lobe. Uncertainties in exact configuration of saline lobes are indicated in Figure 14.

Despite some encouraging gains, however, the Upper Aquifer System is not completely restored. Although high recharge rates related to the increased flows from the Freeman Diversion have improved water levels and water quality south to Port Hueneme and the higher water levels appear to have eliminated the pumping trough, groundwater levels are still at or below sea level (Figure 17) and water quality continues to degrade in the southern portion of the Oxnard Plain near Point Mugu (e.g., well CM6 in Figure 18). It is likely that the pumping trough situation is similar to the one discussed next for the Lower Aquifer System – namely, that this portion of the Upper Aquifer System may be too far from the recharge areas for direct recharge to be effective, and must rely on artificial or in-lieu (surface water delivered and used in-lieu of pumping groundwater) recharge methods to transport replacement water from the Oxnard Plain Forebay basin or other sources of supply. Groundwater levels in the Lower Aquifer System in the south and southeast Oxnard Plain and central and southern portions of the Pleasant Valley areas have been consistently below sea level since at least the early 1950s (Mann, 1959)(Figure 19). The strategy to switch pumping from the Upper Aquifer to the Lower Aquifer has apparently been at least a portion of the cause for the low water levels and high chlorides that were encountered when the RASA monitoring wells were completed at LAS depths. These high chloride levels occur in several wells at the position of the two Upper Aquifer System seawater lobes (Figure 20).

U.S. Geological Survey studies indicated that the chloride in the LAS occurred not just from seawater intrusion, but also from slow dewatering of the surrounding volcanics and older sediments, as well as chloride-rich marine clays that serve as the aquitard between the Upper and Lower aquifer zones. After the U.S. Geological Survey findings became known and there was the realization the shift in pumping was actually mining LAS groundwater, the County of Ventura took action to change the County Well Ordinance (May 1999) so that only replacement wells or special situations would be allowed to draw water from the LAS; new wells would have to be drilled in the UAS.

The decline in Lower Aquifer System water levels from the late 1980s into the 2000s exacerbated a pumping trough extending from the coastline northeastward to the city of Camarillo (Figure 19). This trough is typically well below sea level, with the deepest portion as much as 180 feet below sea level during the drought of the late 1980s and early 1990s. Despite above-average rainfall in many of the preceding ten years, this pumping trough was still as much as 100 feet below sea level in the fall of 2006 (Figure 19).

Although FCGMA policies and new UWCD recharge facilities built over the last 20 years have significantly improved conditions in the Upper Aquifer System, the Lower Aquifer System continues to experience intrusion by saline waters. This saline intrusion comes both from seawater entering the aquifers along the coastline and from saline waters intruded from surrounding sediments. Any solution to this saline intrusion must include raising water levels in the Lower Aquifer System while concurrently keeping water levels in the Upper Aquifer System at their current elevations. One of the biggest groundwater challenges is to provide either additional recharge or an alternative source of water to the south Oxnard Plain and Pleasant Valley to prevent further water quality degradation in the Lower Aquifer System.

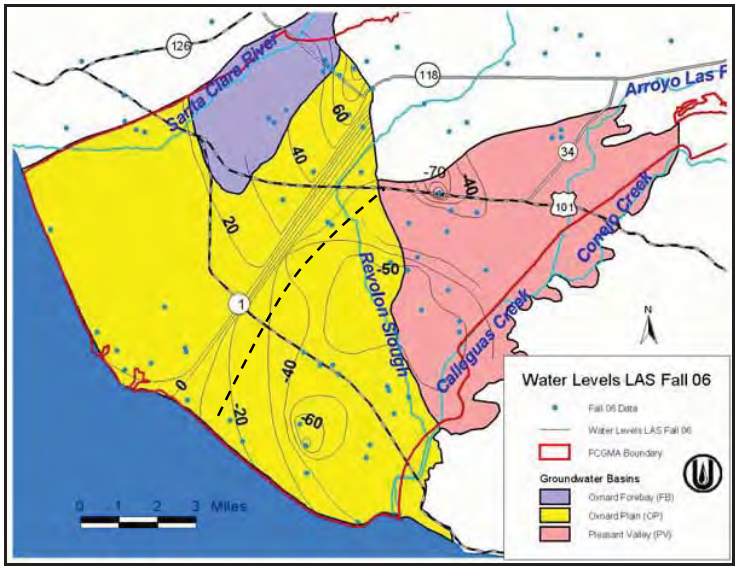


Figure 19. Groundwater elevation contours in the Lower Aquifer System, Fall 2006. Note the distinct series of troughs that extend from the ocean in the south Oxnard Plain northeastward toward Camarillo. These troughs are entirely below sea level. The dashed line indicates the approximate trend of the steep groundwater flow gradients that separate the recharge area in the Forebay from the south Oxnard Plain and Pleasant Valley pumping trough.

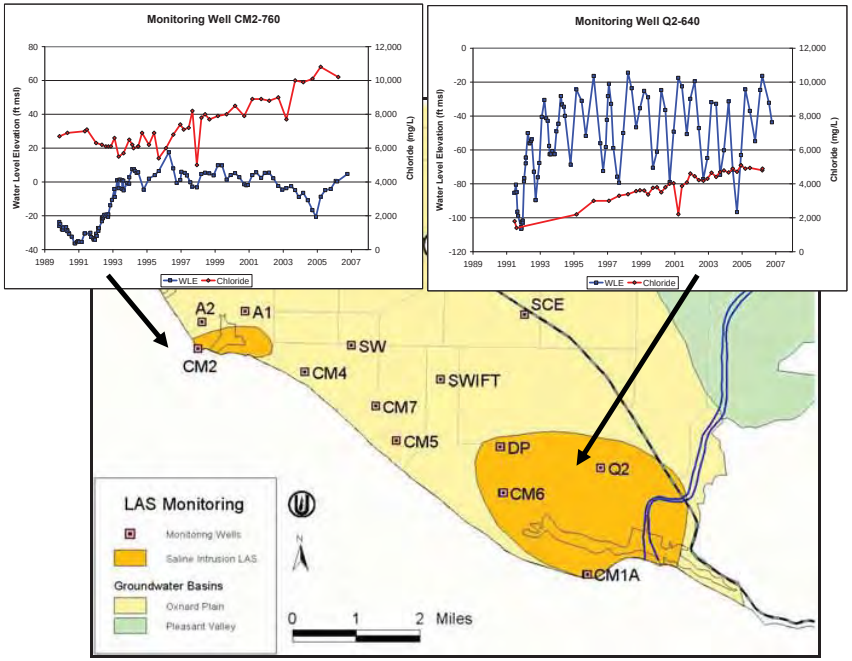


Figure 20. Chloride levels in two Lower Aquifer System coastal monitoring wells. Chloride levels continue to rise in the Point Mugu lobe, requiring new monitoring wells to be drilled inland of current wells to determine the extent of landward movement of high-chloride groundwater. Uncertainties in exact configuration of saline lobes are indicated in Figure 15.

5.2.3 Pleasant Valley Basin

Saline intrusion from surrounding sediments and salinity associated with high groundwater levels are the primary water quality concern in the Pleasant Valley basin. The potential for saline intrusion exists in the depressed groundwater elevations in the Lower Aquifer System of the Pleasant Valley basin (see previous section for discussion of these depressed groundwater levels). The area of depressed groundwater elevations extends from the City of Camarillo to the ocean (Figure 19). Chloride levels within the Pleasant Valley basin are generally less than 150 mg/L, but several wells have shown an increase in chloride. City of Camarillo wells near the Camarillo airport have been affected by the rising chlorides, with one well taken out of service. Increasing chlorides in other wells in the Pleasant Valley basin have recently been shown to have the geochemical signature of "oil-field production water" that underlies the fresh-water bearing aquifers in the basin (Izbicki et al., 2005). This poor-quality water likely was pulled up

along fault zones or other conduits towards the lower pressures of the LAS aquifer that were created by overpumping of the basin.

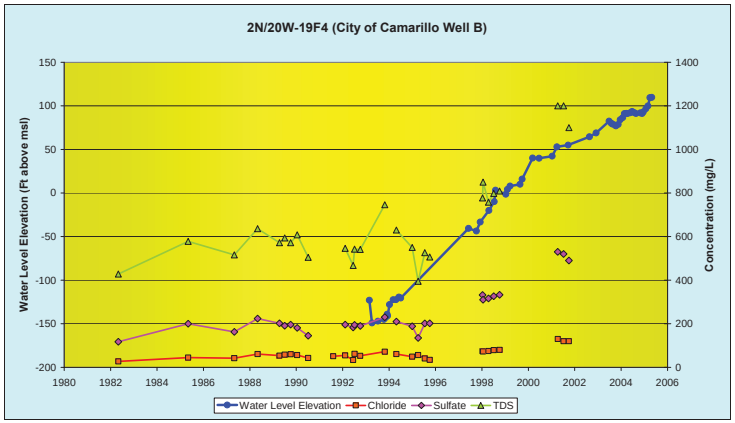


Figure 21. Salts increasing with groundwater elevations, northern Pleasant Valley basin.

Where Arroyo Las Posas crosses into the Pleasant Valley basin in the northern area of the City of Camarillo, the increased flows in the arroyo have raised groundwater levels in the area to historic highs (Figure 21). Coincident with this, water quality has degraded, especially for the constituents sulfate, chloride (Figure 21), iron, and manganese. As in the South Las Posas basin, this higher-salinity water will need to be treated for potable or irrigation use. The City of Camarillo has evaluated the feasibility of treating this poor-quality water, while reducing pumping in the areas of depressed groundwater levels (discussed in section 9.3 *Development of Brackish Groundwater, Pleasant Valley Basin*).

5.2.4 Santa Rosa Basin

The Santa Rosa basin has had long periods where nitrates in some areas were well above drinking water standards (as high as 200 mg/L). Chloride concentrations in the basin are generally between 100 and 150 mg/L, although they have spike locally above 200 mg/L. High chloride concentrations can affect crop production.

5.2.5 West Las Posas Basin

The water quality of the West Las Posas basin currently meets standards for irrigation and drinking water use. Within the pumping depression in the far eastern portion of the basin, samples from two wells have had increased chloride concentrations since 2004. It is not clear if this is the beginning of a trend or if these chlorides were transported into the basin from the shallow aquifer that is generally located along Arroyo Las Posas in the East Las Posas basin (the wells themselves are not along the arroyo).

5.2.6 East Las Posas Basin

Increasing concentrations of salts (chloride, sulfate, sodium) in the portion of the basin along the Arroyo Las Posas continue to be a problem in the East Las Posas basin. Chloride concentrations in the shallow aquifer beneath the arroyo can reach 360 mg/L, whereas chloride concentrations in the surface waters in the arroyo are in the range of 120-180 mg/L (Bachman, 2002). These increased chloride concentrations in the shallow aquifer are associated with historically-high groundwater levels (see discussion in section 5.1.3 *High Salinity Associated with High Groundwater Levels*) that apparently leach salts from previously-unsaturated sediments in the shallow aquifer along the arroyo. The groundwater that contains these chloride-rich salts recharges the Lower Aquifer System by moving downward from the shallow aquifer into the LAS, then northward into the basin. This recharge has formed a chloride-rich recharge mound beneath the Arroyo Las Posas (Figure 22) and northward into the main portion of the East Las Posas basin (Bachman, 2002). Individual wells along the south flank of the basin show a progression of filling of the shallow aquifer, with a coincident increase in chloride concentration (Figure 23). The following section on the South Las Posas basin discusses the age progression of this filling.

5.2.7 South Las Posas Basin

Water quality in the South Las Posas basin is dominated by the movement of salts discussed in the previous section. The filling of the shallow aquifer of the South Las Posas basin progressed from the upstream to the downstream portions of the basin (
Figure 24). With continuing dissolution of salts in the previously-unsaturated sediments, water quality could improve as the salts are expended. Two wells completed in the shallow aquifer beneath the arroyo that have had elevated salts for 20 years have shown a lessening of salinity in the past two years. It is not yet clear if these wells may be a precursor of further salt reduction as salts in the sediments are dissolved and the shallow aquifer begins to reflect the chemistry of surface water in the arroyo (which is higher in chlorides than pre-development conditions, but lower than the groundwater with dissolved salt).

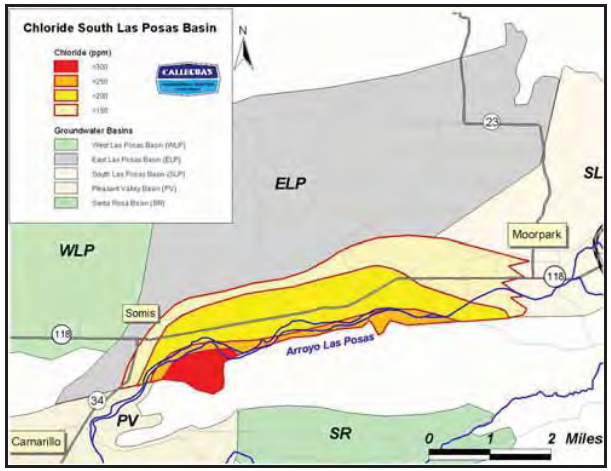


Figure 22. Chloride concentrations (2005-06) in aquifers beneath the Arroyo Las Posas in the East and South Las Posas basins. These concentrations have increased during the last two decades as the shallow aquifer beneath the arroyo has filled to its spill point, caused by increased flow in the arroyo from discharges from dewatering wells and wastewater treatment plants. (Bachman, 2002).

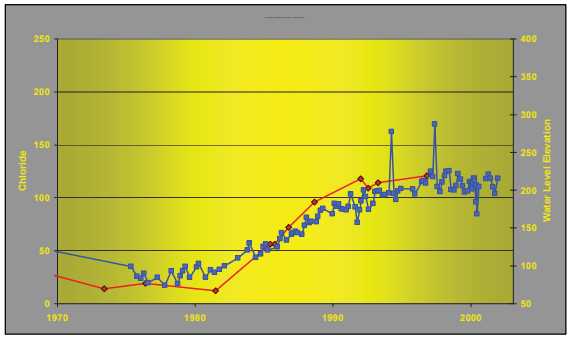


Figure 23. Coincidence of groundwater level rise (blue line with squares) and chloride concentrations (red line with diamonds) in a well in the shallow aquifer along Arroyo Las Posas (Bachman, 2002).

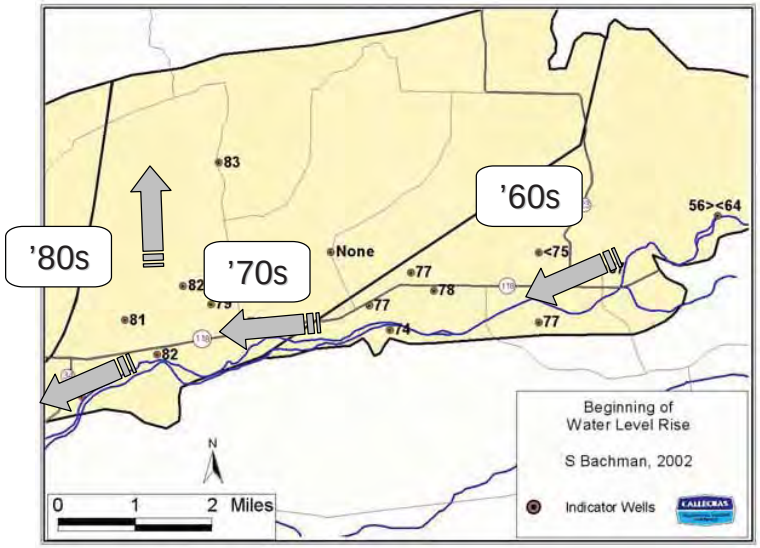


Figure 24. Beginning time of the progressive filling of the shallow aquifer along the Arroyo Las Posas in the South and East Las Posas basins. The number next to each well is the year when groundwater levels started to rise during the filling episode.

5.3 POTENTIAL FUTURE WATER QUALITY THREATS

An area of concern, discussed in the previous section, is potential water quality problems in the Pleasant Valley basin. With groundwater elevations as low as 160 feet below sea level, there exists the potential to pull significant amounts of lower-quality water from surrounding sediments, across or along faults, and from deeper depths (high salinity and/or petroleum-tainted water). Mitigation of these low water levels is important to avoid future water quality problems.

In the northern portion of the Pleasant Valley basin, within the City of Camarillo, increasing chloride concentrations could migrate into the main portion of the basin. However, the details of the hydrogeologic connections from the shallow aquifer to the Lower Aquifer System are still somewhat unclear. Likewise, salt-laden groundwater in proximity to California State University Channel Islands could also migrate from the shallow aquifers to deeper aquifers. This connection is also not well known and the mechanics of transport have yet to be adequately determined, although water level and quality monitoring from wells in the vicinity of the university suggests that the water quality in Lower Aquifer System wells is not affected by poor-quality water in the shallow aquifers. This suggests some barrier to vertical flow between the aquifers in this area.

There are also several other potential water quality concerns within the FCGMA basins. There is a number of leaking underground tanks, some of which have polluted the main aquifers in the basins. Past contamination has been localized and has been addressed through various clean-up operations mandated by the Los Angeles Regional Water Quality Control Board and the Ventura County Environmental Health Department. Water purveyors have become directly involved to ensure rapid cleanup operations in some areas. The FCGMA has lent it support to some of these efforts by water purveyors. There are also possibilities of more-widespread contamination by plumes of such contaminants as perchlorate. Large releases of perchlorate have occurred in the Santa Susana Mountains adjacent to Simi Valley and along the Santa Clara River in Santa Clarita (Los Angeles County). The FCGMA may have to be proactive in the future in ensuring that these and other potential sources do not adversely affect the FCGMA aquifers.

A matter of future water quality concern is the maintenance of current recharge projects that positively affect the Oxnard Plain. Environmental issues in the Santa Clara River and its tributary Piru Creek have the potential for reducing useable water resources – the amount of water available from stored water in Lake Piru and river water at the Freeman Diversion. Since these projects play an integral role in the current FCGMA water management strategies, any loss of yield from these projects would likely reduce some of the gains used in mitigating saline intrusion within the Oxnard Plain.

6.0 BASIN MANAGEMENT OBJECTIVES

6.1 CURRENT OBJECTIVES

Basin Management Objectives (BMOs) are quantitative targets established in a groundwater basin to measure and evaluate the health of the basin. For groundwater basins with seawater intrusion, a critical BMO is maintaining groundwater levels along the coastline to prevent the further intrusion of seawater. In addition, another BMO would be to maintain low concentrations, to the extent possible, of chloride at critical coastal monitoring wells. In inland areas, a BMO would be to ensure groundwater levels prevent conditions that cause groundwater quality degradation. A concurrent BMO would be to maintain concentrations of deleterious chemical constituents in groundwater, such as nitrate and chloride, at or below levels that are harmful to human or animal health or damaging to irrigated crops. Within the FCGMA, several BMOs are appropriate to measure and evaluate the health of the basins. Wells used as monitoring points for the Basin Management Objectives are shown in Figure 25 and described in the following paragraphs.

As part of the BMO attainment process, additional wells may be added to the monitoring process to provide early indications of improving or degrading aquifer conditions at critical locations. An example of such location would be at the north end of the Pleasant Valley Basin where poor quality water from the Las Posas Basin is apparently beginning to enter the Pleasant Valley Basin. This will be an iterative process that will allow the FCGMA to monitor both the current conditions and the relative success of basin management strategies implemented to control water quality in these areas.

6.1.1 Oxnard Plain Basin

The BMO most critical for coastal areas of the FCGMA is the maintenance of groundwater elevations high enough to prevent further seawater intrusion. Because the source of seawater is likely from offshore submarine canyons where the aquifers are truncated and in contact with seawater, coastal aquifers must have groundwater elevations high enough to prevent movement of seawater from the canyons to nearby onshore areas (see discussions in section 5.1.1 *Seawater Intrusion* and section 5.2.2 *Oxnard Plain Basin*). However, seawater is denser than fresh water and the heavier seawater exerts pressure on the fresh water aquifers exposed on the canyon walls – much like water pressure pushes on a diver's mask when the diver descends.

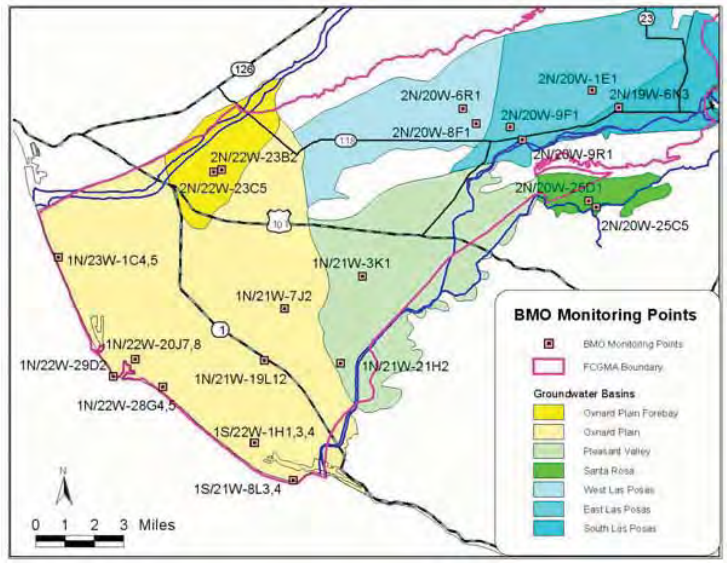


Figure 25. Wells used as monitoring points for Basin Management Objectives.

The pressure differential exerted on the fresh water aquifer depends upon the ocean depth where the aquifer is truncated along the canyon wall – there is the equivalent of 2.5 ft of head (pressure) exerted for every 100 ft of ocean depth. Therefore, an aquifer that is exposed on a submarine canyon wall at 200 ft ocean depth has 5 ft of head exerted on the aquifer by the more-dense seawater. To prevent seawater from intruding from the canyon wall and flowing through the aquifer to the coastline, coastal groundwater elevations must be, on average, at least as high as the head exerted by seawater. Thus, for the example given above, groundwater elevations in monitoring wells at the coastline must average at least 5 ft above sea level to prevent seawater intrusion. The greater ocean depth where the aquifer is exposed to seawater, the higher the average groundwater elevation required to prevent seawater intrusion.

A set of wells was selected to establish the BMOs for the Oxnard Plain basin (Figure 25). Many of these are coastal monitoring wells, completed at different aquifer depths within the Upper (Table 1) and Lower Aquifer Systems (Table 2). There are also several inland wells to detect if a new pumping depression forms in the UAS and if the existing pumping depression in the LAS dissipates. Coastal groundwater elevation objectives were determined using the groundwater elevation and water quality criteria in the preceding paragraph. Inland groundwater elevation objectives were determined such that there is a slight groundwater gradient from the inland areas to the coastline, thereby preventing further landward migration of the existing saline intrusion. The tables list the management objectives for each of the well completions.

The Ventura Regional Groundwater Model suggests that if these groundwater levels are maintained for an adequate period of time, additional saline intrusion will likely be minimized. Water quality objectives for chloride at these wells are also listed in the tables. These objectives follow the Regional Water Quality Control Board's Basin Plan Objective of 150 mg/L for chloride.

Well	BMO Groundwater Level (msl)	Current Level (msl)*	BMO Chloride (mg/L)	Current Chloride (mg/L)
1N/23W-1C5 (CM3-145, 120-145)	Average 3'	9.2'	<150	41
1N/22W-20J8 (A1-195, 155-195)	Average 4'	14.6'	<150	177
1N/22W-20J7 (A1-320, 280-320)	Average 8'	15.5'	<150	81
1N/22W-28G5 (CM4-200, 180-200)	Average 5'	9.0'	<150	237
1N/22W-28G4 (CM4-275, 255-275)	Average 7'	8.4'	<150	6,536
1N/21W-19L12 (SCE-220, 200-220)	Average 5'	11.3'	<150	67
1S/22W-1H4 (CM6-200, 180-200)	Average 5'	1.8'	<150	4,089
1S/22W-1H3 (CM6-330, 310-330)	Average 8'	-12.5'	<150	1,630
1S/21W-8L4 (CM1A-220, 200-220)	Average 5'	-4.9'	<150	16,917

Table 1. Basin Management Objectives for Upper Aquifer System wells in the Oxnard Plain basin. Well name and perforation depths follow State Well Number.

Well	BMO Groundwater Level (msl)	Current Level (msl)*	BMO Chloride (mg/L)	Current Chloride (mg/L)
1N/23W-1C4 (CM3-695, 630-695)	Average 17'	15.4'	<150	36
1N/22W-29D2 (CM2-760, 720-760)	Average 19'	0.2'	<150	9,783
1S/22W-1H1 (CM6-550, 490-550)	Average 13'	-33.3'	<150	3,512
1S/21W-8L3 (CM1A-565, 525-565)	Average 14'	-42.3'	<150	4,161
1N/21W-7J2 (PTP #1, 590-1280)	Average 20'	-52.0'	<150	42

Table 2. Basin Management Objectives for Lower Aquifer System wells in the Oxnard Plain basin. Well name and perforation depths follow State Well Number.

6.1.2 Pleasant Valley Basin

In the Pleasant Valley basin, groundwater elevation objectives were calculated to be slightly higher than coastal objectives to prevent landward migration of existing saline intrusion, and to

* Groundwater levels are average for last 10 years; chemical concentrations are average for last 3 years.

minimize vertical groundwater gradients that pull salts from encasing marine clays, from surrounding older marine and volcanic rocks, or from deeper waters within the oil fields of the basin. An additional BMO is to maintain chloride concentrations at or below the Regional Water Quality Control Board's Basin Plan Objective of 150 mg/L. These objectives are indicated in Table 3.

Well	BMO Groundwater Level (msl)	Current Level (msl)*	BMO Chloride (mg/L)	Current Chloride (mg/L)
1N/21W-3K1 (PV #4, 403-1433)	Average 20'	-47.2'	<150	107
1N/21W-21H2 (PV #10, 503-863)	Average 20'	-51.9'	<150	93

Table 3. Basin Management Objectives in the Pleasant Valley basin. Well name and perforation depths follow State Well Number.

6.1.3 Oxnard Plain Forebay Basin

In the Oxnard Plain Forebay basin, nitrate concentrations above drinking water standards have historically been a recurring problem. BMOs in the Forebay basin focus on protection of public drinking water wells (nitrate and TDS) and irrigation suitability (TDS). The management objectives are chosen for wells in the Oxnard-Hueneme wellfield (operated by UWCD) because this is the largest potable water system in the Forebay. The management objectives will maintain nitrate concentrations at one-half or less of the Maximum Contaminant Level for drinking water (45 mg/L of NO3 which is a primary drinking-water standard); at concentrations higher than the BMO of 22.5 mg/L, water purveyors must increase monitoring and reporting to the California Department of Health Services. The TDS objective is set at the Regional Board's Basin Plan Objective of 1,200 mg/L. These BMOs are set at two representative pumping wells (Figure 25) in the O-H Wellfield (Table 4).

Well	BMO Nitrate (as NO_3) (mg/L)	Current Nitrate (mg/L)*	BMO TDS (mg/L)	Current TDS (mg/L)
2N/22W-23B2 (135-277)	<22.5	13	<1200	1044
2N/22W-23C5 (140-310)	<22.5	8	<1200	1010

Table 4. Basin Management Objectives for the Oxnard Plain Forebay basin. Perforation depths follow State Well Number.

6.1.4 Las Posas Basins

In the South and East Las Posas basins, BMOs cannot be linked directly to observed groundwater levels, because the Calleguas MWD aquifer storage project (in-lieu deliveries and direct injection into the aquifer) creates artificially high groundwater levels that are not indicative of the state of the basin. Instead, the proposed East Las Posas Basin Management Plan (Appendix C) contains a method to use groundwater levels along with a computerized groundwater model to monitor the health of the basins.

The recharge mound that is moving northward from the Arroyo Las Posas (Bachman, 2002) has mobilized salts from the shallow aquifer (primarily located along the Arroyo) vertically downward into the Lower Aquifer System and then north into the main portion of the basin. This

* Groundwater levels are average for last 10 years; chemical concentrations are average for last 3 years.

subsurface movement of groundwater occurs because the head (pressure) in the LAS are lower than in the UAS. Therefore, an appropriate BMO for the East and West Las Posas basins is to maintain a chloride concentration that is suitable for agricultural irrigation use (this concentration is well below the standard for drinking water).

Monitoring points for these BMO chloride concentrations (Figure 25) were selected both in the degraded southern portion of the basin, as well as in areas unaffected by the migrating salts. The East and West Las Posas basins' objective for the chlorides is set at 100 mg/L to protect salt-sensitive crops such as avocados and berries (Table 5). It should be noted that salt concentrations, and especially chloride, are already high within the South Las Posas basin. This chloride is caused by groundwater at historically high elevations apparently dissolving salts from sediments that were historically unsaturated (see section 5.1.3 *High Salinity Associated with High Groundwater Levels*). Specific management strategies to address the South Las Posas basin are discussed later in this Plan. The BMOs for chloride and TDS in the South Las Posas basin are set at the average concentration of the surface water in Arroyo Las Posas, which is the concentration that would likely be attained when salts dissolved from sediments are either removed or have migrated elsewhere, and the groundwater then reflects the chemistry of its primary recharge source.

Well	BMO Chloride (mg/L)	Current Chloride (mg/L)§	BMO TDS (mg/L)	Current TDS (mg/L)
2N/20W-9F1 (906-1290)(ELP)	<100	164	<500	1,196
2N/20W-9R1 (456-724)(ELP)	<100	187	<500	1,330
2N/20W-1E1 (567-907)(ELP)	<100	28	<500	638
2N/20W-6R1 (1090-1512)(WLP)	<100	12	<600	520
2N/20W-8F1 (752-1406)(WLP)	<100	34	<600	410
2N/19W-6N3 (101-121)(SLP)	<160	150	<1500	1,500

Table 5. Basin Management Objectives for the Las Posas basins. Perforation depths and basin identifier follow State Well Number.

There are also specific water quality criteria for water injected into the East Las Posas basin as part of the Las Posas Basin ASR project. These criteria are included in a letter from the FCGMA to Calleguas MWD dated July 12, 1994 that approved the project as an injection/extraction facility. These criteria include: sodium absorption ratio 1-4 meq/L, TDS 100-800 mg/L, electrical conductivity not to exceed 1100 uMHO, chloride not to exceed 120 mg/L, boron not to exceed 1 mg/L, and nitrate (presumably as NO3) less than 45 mg/L.

6.1.5 Santa Rosa Basin

Basin Management Objectives for the Santa Rosa basin follow the Regional Board's Basin Plan Objectives (Table 6).

§ Groundwater levels are average for last 10 years, chemical concentrations are average for last 3 years.

Well	BMO Nitrate (mg/L)	Current Nitrate (mg/L)*	BMO Chloride (mg/L)	Current Chloride (mg/L)
2N/20W-25C5 (Unknown)	<45	116	<150	145
2N/20W-25D1 (UAS)	<45	60	<150	78

Table 6. Basin Management Objectives for the Santa Rosa basin. Aquifer designation (if known) follows State Well Number.

6.2 ASSESSMENT OF BASIN MANAGEMENT OBJECTIVES

The parameters for the proposed Basin Management Objectives (BMOs) are currently monitored on a regular frequency throughout the FCGMA, primarily by the VCWPD and UWCD. Along the coastline of the southern portion of the Oxnard Plain basin, BMOs are being met only in a portion of the Upper Aquifer System (see description and discussion of the Oxnard Plain basin in section 3.0 *Groundwater Basins and Hydrogeology*). Within the Lower Aquifer System, BMOs are significantly different than observed measurements. Groundwater levels are well below sea level both near the coastline and in a wide trough that extends into the Pleasant Valley basin beneath the City of Camarillo.

The Ventura Regional Groundwater Model was used to determine the effectiveness of current and future management strategies in meeting BMOs for groundwater levels. These results are reported under each management strategy and are summarized in Table 8 within the sections on management strategies. The model results were compared to the groundwater level goals set in the BMOs for each strategy that was amenable to evaluation by the model. For instance, strategies that involve shifting the place or amount of recharge and/or pumping can be effectively simulated using the model. Strategies that deal exclusively with water quality, such as reductions in nitrate sources, are not amendable to evaluation using the groundwater flow model.

When current management strategies are applied in the model, BMOs for groundwater levels are met or exceeded in 51% of the quarterly time-steps during the 55-year model period for the Upper Aquifer System (meaning that about half of the time groundwater levels are at or above the BMO values and half the time they are below) and only 5% of the time for the Lower Aquifer System. Successful management strategies are those where groundwater levels meet or exceed the BMOs at least half the time – meeting BMOs all the time is a more conservative approach, but requires much larger and more expensive strategies and does not take into account the natural climatic variations in groundwater levels that occurred even before the basin was pumped extensively. When coastal groundwater elevations are below the BMOs during dry periods, seawater could be pulled into the aquifers, but would then be pushed out during wet periods as groundwater levels rose above the BMOs. This has been the experience in the Upper Aquifer near Port Hueneme, where seawater moved inland and then receded with climatic variations in groundwater elevations below and above the BMOs for that area.

BMOs for LAS groundwater elevations are not being met in the Pleasant Valley basin because of this wide trough of depressed groundwater elevations (see map and discussion in section 3.0 *Groundwater Basins and Hydrogeology*). BMOs for chloride concentrations are not currently being met in all portions of the basin, with chlorides increasing in several wells. A study

conducted by UWCD (see following section) indicate some of these chlorides might be pulled from depth with "oil-field production water"[**] that underlies the fresh-water bearing aquifers in the basin (Izbicki et al, 2005). Chloride concentrations are being carefully monitored in the Pleasant Valley basin.

In the Oxnard Plain Forebay basin, BMOs are being met most of the time. However, nitrate concentrations in individual wells in the Oxnard-Hueneme wellfield have periodically been at or above the drinking water standard during drought. Currently, these high nitrates have been evident only during the driest portions of the year when pumping water elevations were at their maximum depth. Both fertilizers from overlying agriculture operations and numerous individual septic tanks are likely contributors to the recurring high nitrate levels in the Forebay, as discussed in the following section. Nitrate problems continue to plague the Santa Rosa basin as well. The high nitrate concentrations in the Santa Rosa basin are also believed to be caused by excessive fertilizer use and numerous individual septic systems.

Two emerging processes could significantly improve source control of nitrate within the FCGMA. Ventura County is in the process of eliminating hundreds of concentrated leach-line septic systems located in the El Rio area of the southern portion of the Oxnard Plain Forebay basin and the northern Oxnard Plain basin; the homes will be connected instead to the adjacent City of Oxnard wastewater system. In addition, the Conditional Discharge Waiver for Irrigated Lands is being put into effect in 2005-2006 by the Los Angeles Regional Water Quality Control Board. This process, with sub-watershed sampling of runoff from agricultural lands, will likely decrease the loading of nitrates from fertilizer through Best Management Practices and education. By 2010, the required monitoring will likely extend to agricultural waters that are percolating to groundwater, in addition to the current emphasis on surface waters.

In the East Las Posas basin, chloride concentrations are higher than the basin management objective in the two wells closest to the Arroyo Las Posas (wells 9F1 and 9R1, Figure 25). Chloride concentrations as high as 273 mg/L have been detected in these wells. Farther into the main portion of the basin, well 1E1 has chloride concentrations of less than 30 mg/L, well below the BMO. In the West Las Posas basin, chloride concentrations remain below the BMO largely because the fault that separates the West and East Las Posas basins appears to be an effective barrier to groundwater flow and the poor-quality water in the East Las Posas basin does not flow into the western basin. Of concern, however, is the recent transient occurrence of higher chlorides in two wells just to the west of the fault. It is not yet known if this is the beginning of wider-spread degradation or if this is caused by periodic overtopping of the fault by poor quality waters in the shallow aquifer along the Arroyo Las Posas.

7.0 YIELD OF THE GROUNDWATER BASINS

7.1 ORIGINAL FCGMA CALCULATION

The approximate yield of all basins within the FCGMA was calculated for the original management plan as approximately 120,000 AFY. This yield was based on a water budget for the year 1980, with estimates of the water balance for every fifth year to 2010. In the year 2010, there were estimated to be extraction rates 25% higher than recharge rates. This calculation is

[**] Izbicki compared the isotopic composition of the sampled groundwater with that of water produced with the oil that was pumped from nearby shallow oil wells.

the origin of the 25% pumping reduction required by the FCGMA. The potential inaccuracies in the assumptions that went into the original balance calculation were not discussed in the previous Management Plan, but they are likely to be relatively high (e.g., Bachman et al, 2005). Note that this yield is not basin-specific, which is discussed in more detail below.

7.2 DEFINITION OF BASIN YIELD

The yield of a basin is the average quantity of water that can be extracted from an aquifer or groundwater basin over a period of time without causing undesirable results. Undesirable results include permanently lowered groundwater levels, subsidence, or degradation of water quality in the aquifer. A basin is in overdraft if the amount of water pumped from the basin exceeds the yield of the basin over a period of time. This does not mean that the same amount of water must be pumped each year – pumping in individual years may vary above or below the yield of the basin during drought or wet years, or as part of basin management plans. If water management in the basin changes, the yield of the basin may change.

The term "safe yield" is often used in judicial proceedings for basin yield; it is determined by technical professionals and subsequently interpreted by courts to define the legal rights to extract groundwater in a basin (further discussion in Bachman et al, 2005). Outside of judicial proceedings, terms such as "perennial yield" are commonly used for basin yield. For the purpose of this Management Plan, the term "yield" is synonymous with "perennial yield" which follows the definition in the previous paragraph.

7.3 METHOD OF CALCULATING BASIN YIELD

To evaluate whether falling groundwater levels are likely to cause an undesirable result (i.e., whether the basin is presently in overdraft), a basin's water levels are evaluated over at least one complete hydrologic cycle to establish a trend. Since hydrologic conditions vary throughout each year and over long periods of time spanning multiple years, conditions must be analyzed over a long period (generally several decades) to accurately determine if the yield has been exceeded such that overdraft is present. If the trend suggests a continual drop in water levels over time, even after wet year conditions, then undesirable results are likely to eventually occur and the basin is considered to be in a state of overdraft.

Methods to determine basin yield include (e.g., Bachman et al, 2005):

- Hydrologic balance,
- Change in groundwater levels over an average hydrologic base period,
- Zero net groundwater level fluctuation,
- The correlation between groundwater levels and extractions,
- Change of storage vs. extractions,
- Calculation of groundwater inflow,
- Groundwater modeling,
- Annual retained inflow and change in groundwater levels,
- Pumping trough in a coastal aquifer (basin yield is exceeded if pumping trough at the ocean creates conditions for seawater intrusion).

The yield calculation for the 1985 FCGMA Management Plan used the hydrologic balance method – summing up all the water inputs and outputs to determine how much could be extracted from the basins. The calculation was not done over a period of wet and dry years, which is the current standard. The basin yield for this Management Plan was calculated using

the groundwater modeling method. This method integrates aspects of some of the other methods:

- A hydrologic balance is calculated in the model;
- One of the model outputs is a change in groundwater levels over an average hydrologic base period; and
- A pumping trough in a coastal aquifer is one of the criteria to determine if the basin yield has been exceeded.

The groundwater model technique is more rigorous than the 1985 hydrologic balance calculation because the calculation of a water budget depends upon inputs and outputs (Table 7) to the groundwater basins which can be difficult to estimate independently. The groundwater model also has similar inputs and outputs, but the groundwater model is calibrated to match actual measured groundwater levels over a long period of wet and dry years. This calibration of the groundwater model lessens some of the potential errors in a water budget calculation.

Model Parameter	*Input*	*Output*
Aquifer geometry	Yes	
Recharge, discharge areas	Yes	
Aquifer properties (e.g., transmissivity, storage coefficient)	Yes	
Boundary conditions at edge of model	Yes	
Faults	Yes	
Rainfall percolation	Yes	
Streamflow	Yes	
Recharge from adjacent bedrock	Yes	
Irrigation return flow	Yes	
Artificial recharge	Yes	
Pumping	Yes	
Groundwater elevations	For calibration	Yes
Groundwater flow from one area to another (horizontal & vertical)		Yes

Table 7. Inputs and outputs from groundwater flow model (Ventura Regional Groundwater Model).

The groundwater model used was constructed by the U.S. Geological Survey as part of their RASA study (Hanson et al, 2003), which has since been updated and upgraded by UWCD. The groundwater model is described in more detail in Appendix B. The model was also used to test the efficacy of various management strategies. The base period used for the model runs was 1944 to 1998, which encompasses several wet and dry cycles; this period was also used as a base period in the Santa Paula basin and Santa Maria basin adjudications during the last decade. The base period is only used in the model to simulate the natural hydrology over the 55-year period – modern and future man-made inputs and outputs such as water facilities, pumping, and artificial recharge are added to the model to determine both the current state of the basin and the future state of the basin with new management strategies applied.

There is little doubt that the coastal basins within the FCGMA have exceeded their yield and been in overdraft for several decades. The over-arching undesirable result of lowered groundwater levels has been seawater and other saline intrusion. A key aspect of the modeling was to determine the basin yield such that these undesirable results caused by lowered groundwater levels were eliminated.

Basins within the FCGMA that do not abut the coastline and do not themselves have saline intrusion cannot be evaluated directly for this undesirable result. The 1985 FCGMA Management Plan handled this by treating all the basins of the FCGMA as a common pool – an action in one of the basins would also affect the other basins – so pumping in one basin affects groundwater levels in adjacent basins. There is ample evidence that this proposition continues to be correct, with potentially two exceptions (East and South Las Posas basins). The Oxnard Plain Forebay, Pleasant Valley, West Las Posas, and Santa Rosa basins are all hydrologically connected to the coastal basins, evidenced by the continuity of groundwater elevation contours across their boundaries. The East and South Las Posas basins appear to be hydrologically disconnected within the subsurface from the other basins, separated from adjacent basins by either the north-south fault between the East and West Las Posas basins or a structural discontinuity between the basins and the northern Pleasant Valley basin at LAS depths. Thus, in this Management Plan, the East and South Las Posas basins are combined in determining basin yield and the remaining basins are combined for the same purpose. An example of this combination is the Oxnard Plain Forebay basin – although the basin regularly fills during wet periods, it is so directly connected to the Oxnard Plain basin (there are no hydrologic barriers preventing flow between the basins) that it is not considered separately in determining basin yield.

To determine the yield of the two sets of basins, groundwater levels calculated by the groundwater model for the 55-year forward model period were then compared to the section 6.0 *Basin Management Objectives* in the various basins to determine how close the modeled groundwater levels were to the objective groundwater levels. Because the model simulates conditions over several wet and dry climatic cycles, average modeled groundwater levels were compared to the objectives. The following section summarizes the results of these comparisons.

The basin yield calculation was accomplished in several steps:

1) The groundwater model was run in its 55-year forward model configuration (see Appendix B) with current management strategies included. If modeled groundwater levels were at or higher than Basin Management Objectives for more than half of the time, then undesirable effects such as seawater intrusion were less likely to occur and the basins were considered to be operated within their yield. If not, then the basins were considered to be operating in excess of their yield.

2) Groundwater extractions in the basins were either increased or decreased by stepwise amounts to determine the amount of pumping that would meet the criteria of modeled groundwater levels being at or above BMOs for more than half of the time, but not exceed, BMOs. Extraction were modified in two ways: a) changes were made proportionately to all wells in the basins within the FCGMA, and b) changes were made only in portions of the basins that were tailored to prevent undesirable effects (e.g., extractions were reduced in the south Oxnard Plain and Pleasant Valley only).

3) As an additional calculation, all of the management strategies in this Management Plan were combined in one model scenario to simulate whether Basin Management Objectives can be met when all the strategies were applied – in other words, can these objectives be met with the tools that may be available.

7.4 BASIN YIELD

When current strategies were applied in the Base Case groundwater model run (see Appendix B), groundwater levels in the Upper Aquifer System met or exceeded BMOs 51% of the time and in the Lower Aquifer System 5% of the time. These results are consistent with observed groundwater conditions today, where groundwater levels are close to BMOs in the Upper Aquifer (and seawater is largely being held back) and significantly below BMOs in the Lower Aquifer. Thus, both the model results and observed groundwater levels indicate that the basins within the FCGMA are not being operated within their yield under the current pumping patterns and management strategies – lowered groundwater levels create undesirable effects such as saline intrusion.

To determine basin yield, pumping was then reduced step-wise in the forward model until BMOs were met at least half the time during the model simulation. As indicated above, two methods of pumping reductions were used – GMA-wide and targeted only to the south Oxnard Plain and Pleasant Valley basins. The results of these model runs are shown in Figure 26.

Figure 26 indicates that when progressively greater pumping reductions are applied to all wells within the FCGMA, Lower Aquifer BMOs are attained at least 50% of the time when FCGMA pumping is reduced to about 65,000 AFY – about half of current average pumping. When the reductions are limited to the south Oxnard Plain and Pleasant Valley basins, overall FCGMA pumping is reduced to about 100,000 AFY to attain the same Lower Aquifer BMO goals. Because the significant lowering of groundwater levels has occurred in the south Oxnard Plain and Pleasant Valley areas, it is appropriate that this is where pumping reductions should occur, as they have through historic in-lieu water deliveries. Thus, 100,000 AFY appears to be an appropriate number for basin yield.

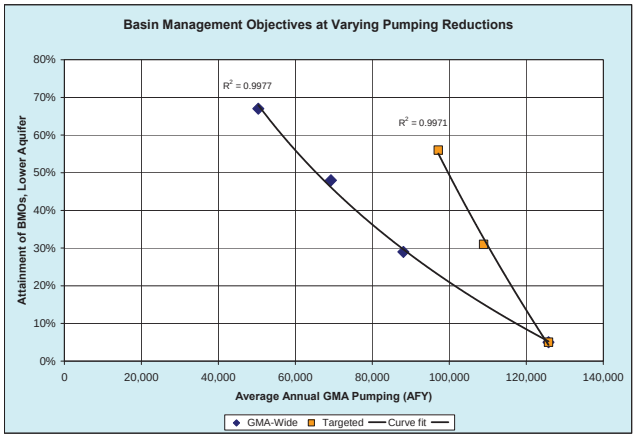


Figure 26. Groundwater model results from progressively reducing FCGMA pumping both agency-wide (diamond symbol) and targeted to the south Oxnard Plain and Pleasant Valley basins (square symbol). Results are indicated as percent of time that BMOs are met or exceeded in the Lower Aquifer System. R^2 values are indicated for the two curve fits.

There are three caveats to this calculation of basin yield:

1) Overall pumping in the south Oxnard Plain and Pleasant Valley areas was reduced by about 25,000 AFY (an 85% reduction). There are several approaches to achieve this reduction, with replacing the pumping with in-lieu deliveries being the primary historic method that is also favored in the management strategies discussed in this Plan.

2) The yield of the basins is not a forever-fixed number, but depends upon the projects in the basin – increasing the amount of recharge in the basins also increases the yield of the basins. Therefore, the yield of the basins must be recalculated periodically as new projects become operational and conjunctive use is increased.

3) When Lower Aquifer BMOs are attained 50% of the time, there should be no net movement of seawater within the aquifers. However, during dry periods there would be onshore gradients and during wet periods there would be offshore gradients. Thus, seawater may move landward during the dry periods and be pushed back during wet periods (which has been evident over the past 15 years at coastal Port Hueneme). To create conditions such that seawater could never move landward, the Lower Aquifer goals would have to be met nearly 100% of the time – an unrealistic goal that would require very large pumping reductions and create conditions where large quantities of fresh water were flowing to the ocean almost all the time. The 50% attainment of BMOs should be considered as an initial target level, but should be revisited as that goal is approached to ensure that it is sufficiently protective of the aquifers. If water quality problems continue as the 50% attainment level is approached, an increase in the attainment level should then be considered. Thus, the basin yield of 100,000 AFY that is tied to the 50% attainment level may have to be adjusted in the future.

An additional basin yield task was to apply all the future management strategies into one simulation of the model to determine whether Basin Management Objectives could be met if these strategies were in place. After applying the management strategies discussed in section 9.0 *Management Strategies Under Development* and section 10.0 *Potential Future Management Strategies*, the groundwater modeling indicates that Upper Aquifer BMOs could be met 67% of the time and Lower Aquifer BMOs could be met 76% of the time. Thus, application of the management strategies in this Plan apparently can solve the overdraft within the FCGMA.

8.0 CURRENT GROUNDWATER MANAGEMENT STRATEGIES

This Plan evaluated three types of management strategies for effectiveness: 1) currently implemented management strategies; 2) strategies under development where some action has already been taken to design and implement those strategies; and 3) potential future management strategies. Current strategies were evaluated by measuring their effect on changing groundwater levels and improving groundwater quality. Proposed and future strategies were evaluated using the Ventura County Regional Groundwater Model (an empirical computer simulation of groundwater flow described in Appendix B).

Several management strategies were adopted as part of the original 1985 FCGMA Management Plan. In addition, several other strategies were also implemented in the ensuing period since 1985. The previously-adopted 1985 FCGMA management strategies are discussed first, followed by the additional strategies. The effectiveness of these management strategies is then evaluated in the following discussion.

8.1 DESCRIPTION OF 1985 FCGMA MANAGEMENT PLAN STRATEGIES

The original 1985 FCGMA Management Plan specified several management strategies that would be implemented. These included the following general strategies.

8.1.1 Limitation of Groundwater Extractions

The most visible of the FCGMA strategies was the phased reduction in pumping within the FCGMA, implemented under FCGMA Ordinance No. 5 (now Chapter 5 within Ordinance No. 8.1). This strategy called for a 25% pumping reduction over a 20-year period via phased 5% incremental cutbacks to Historical Allocations every 5 years. As part of this strategy, pumping allocations, conservation credits, and agricultural irrigation efficiency allowances were implemented. To allow inherent flexibility, the Ordinance provides for Historical Allocation adjustments of no more than two acre feet per acre when land use changes from farming to municipal/industrial. A Baseline Allocation of one acre foot per acre was established for lands without allocations or lands that were developed after the baseline period ended in 1989 and were dependent upon groundwater. In addition, an Efficiency Allocation that allows farmers sufficient allocation to grow different crops as long as they remain at least 80% efficient (less than 20% of irrigation water runs off, leaches, or goes to deep percolation). Baseline and Efficiency allocations are exempt from the mandatory 25% reductions. To discourage overpumping, the FCGMA Ordinance imposes an extraction surcharge on all water pumped in excess of the annual allocation. The penalty initially ranged from $50/AF to $200/AF under a four-tiered system; however, that system was modified in favor of a single flat rate that was adjusted upward to $725/AF.

Ordinance No. 5, now part of Ordinance No. 8.1, also has a provision for establishing Conservation Credits by extracting less groundwater than the Historical Allocation. Conservation Credits can be used to avoid paying penalties when extractions exceed the allocation. A second type of credit, Injection or Storage, may be established and applied to future extractions when foreign water is injected or percolated into the aquifer. Conservation credits are allowed to accumulate with no restrictions, allowing some pumpers to accumulate credits for tens of thousands of acre-feet of water.

The required phased 5% reductions occurred in 1992, 1995, and 2000 for a current reduction of 15% of allocation for pumpers using their Historical Allocation. The planned additional 5% reduction for 2005 has been delayed per a request from M&I well owners who have asked for a re-evaluation of the effectiveness of such reductions as part of formulating this Management Plan.

8.1.2 Encourage Both Wastewater Reclamation and Water Conservation

The Ventura County Planning Department prepared a “Water Conservation Management Plan” which recommended various voluntary measures that could be employed to conserve water. Many farmers, individual households, and cities have adopted voluntary agricultural and urban water conservation programs. For several years, in the late 1980s and early 1990s, the County Planning Department designated Planner positions as “Water Conservation Coordinators.” This program no longer has funding, but the water conservation program created material that continues to be distributed to schools and the public.

A Countywide Wastewater Reuse Study, prepared in 1981, identified wastewater reuse opportunities in the Las Posas Valley from either the Simi Valley Wastewater Treatment Plant or the Moorpark Wastewater Treatment Plant, and identified an opportunity to use recycled

wastewater from the Thousand Oaks/Hill Canyon Wastewater Treatment Plant for irrigation on the Oxnard Plain. Since that report, the Moorpark Wastewater Treatment plant has upgraded to tertiary disinfection and a portion of the recycled water is supplied for irrigation to nearby golf courses. The Thousand Oaks/Hill Canyon project (now known as the Conejo Creek Diversion project) has been in operation for several years; it is discussed in the following section. In addition, the City of Oxnard's proposed recycled water project is discussed in section 9.1 GREAT Project (Recycled Water).

8.1.3 Operation of the Oxnard Plain Seawater Intrusion Abatement Project (UWCD's Pumping Trough Pipeline, Lower Aquifer System Wells, Freeman Diversion) –

The Pumping Trough Pipeline (PTP) was constructed in 1986 to convey diverted Santa Clara River water to agricultural pumpers on the Oxnard Plain, thus reducing the amount of groundwater extractions in areas susceptible to seawater intrusion (Figure 27). When river water is not available, five Lower Aquifer System wells pump water into the pipeline. The Freeman Diversion (1991), which replaced the former use of temporary diversion dikes in the Santa Clara River with a permanent concrete structure, now allows for diversion of river storm flows throughout the winter rainy season. As a side benefit, the Freeman Diversion helped stabilize the riverbed after years of degradation caused by in-stream gravel mining. The permanent Freeman Diversion increased the yield of the Seawater Intrusion Control Project by about 6,000 AFY over the previous means of temporary diversion.

8.1.4 Operating Criteria for the Oxnard Plain –

The combination of FCGMA policies and water conservation facilities have effectively moved pumping away from the coastline and from the Upper Aquifer System to the Lower Aquifer System. The switch in aquifer pumping is discussed in the next FCGMA strategy. The effectiveness of these criteria is discussed in section 8.3 Effectiveness To-Date of Current Management Strategies.

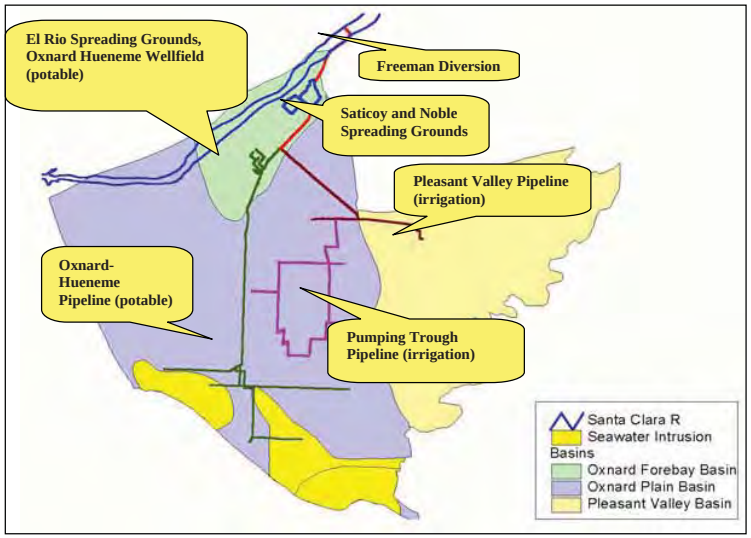


Figure 27. Elements of the Seawater Intrusion Control Project on the Oxnard Plain.

8.1.5 Construction/Modification Restrictions on Upper Aquifer System Water Wells –

In areas where they could cause overdraft or seawater intrusion in the Oxnard Plain basin, the County adopted a well ordinance that prohibited new wells in the Upper Aquifer System in the Oxnard Plain basin, instead requiring new and replacement wells to be drilled in the Lower Aquifer System. The effectiveness of this strategy is discussed in section 8.3 *Effectiveness To-Date of Current Management Strategies*.

This policy has now been shifted. A new policy for areas where pumping could cause overdraft or seawater intrusion in the Oxnard Plain basin (especially in what are called Sealing Zones 1 and 2 where multiple aquifer layers exist) was adopted by the County. This new well ordinance, adopted in 1998, prohibited new wells in the LAS beneath the Oxnard Plain, instead requiring new and replacement wells to be drilled into the more-easily replenished UAS. This shift in pumping was effected by a change in the County Well Ordinance to institute a complete reversal in which aquifers are targeted for production based on findings from the U.S. Geological Survey RASA study and observations from the network of monitoring wells. Since the County Well Ordinance was revised in 1998, only replacement wells or situations with no other water supply option available may tap into the LAS beneath the Oxnard Plain.

8.1.6 Annual Groundwater Monitoring Program

The FCGMA and UWCD participated with the USGS in installing (circa 1990) a series of multiple-completion nested monitoring wells along coastal areas of the Oxnard Plain basin and

in a few inland areas. These wells allow measurement of groundwater levels and sampling of water quality at two to six discrete aquifer depths at each well site. These wells, in addition to a wide range of productions wells, are now being monitored at regular intervals by VCWPD and UWCD. The VCWPD findings are entered into a database and published as supporting data in various reports on water quality, groundwater basins, or special subject or area studies. UWCD enters its monitoring data into a database that is then augmented by monitoring data from VCWPD and California Department of Health Services (public supply wells). UWCD conducts an annual evaluation of all the monitoring results in its database and prepares an annual report that is available on UWCD's website (www.unitedwater.org).

8.1.7 Contingency Plan for LAS Seawater Intrusion

Although it was hoped that such a plan would never be needed, the FCGMA staff developed an as-yet-unfinished and informal contingency plan that consists of a list of possible measures that could be instituted to address intrusion of seawater into the LAS. The list items were only to be offered to the FCGMA Board as possible countermeasures in the event of a severe water quality decline in a significant number of LAS wells. This list included suggestions such as managing the intruded basin in a separate management scheme, further reductions in LAS well Historical Allocations, possible groundwater use restrictions by maximum volume per acre served (in the case of irrigated lands or per resident or dwelling unit in the case of urbanized areas), a complete ban on all future LAS wells regardless of need or circumstance, monetary or other potential incentives to encourage LAS well owners to destroy wells in favor of other possible water sources, and other such means of LAS management.

8.1.8 North (now called East and West) Las Posas Basin Pumping Restrictions

The FCGMA adopted Ordinance No. 4 (now Chapter 4 within Ordinance 8) that prohibits expansion of water use outside the Las Posas Basins and/or the Agency boundary, especially on the sensitive Aquifer Outcrop Zone or Expansion Area. The Aquifer Outcrop Zone is that land or geographic area where the Fox Canyon and/or Grimes Canyon aquifers reach the ground surface and are exposed as outcrops. Ordinance 4 restricts or precludes use of any harmful land uses in this zone (such as impervious surfaces, septic systems, pesticides, fertilizers, or groundwater withdrawals), because this area acts as a direct conduit to the usable aquifer water stored at depth. The Expansion Area was defined as that portion of land from the crest of the hill or 1.5 miles beyond the Agency boundary (northernmost extension of the Aquifer Outcrop) that drains into the Agency. Because groundwater quality protection and prevention of volume exports are the prime subjects of these laws, the Expansion Area was officially designated as an official Sphere of Influence zone by the Ventura LAFCO (Local Area Formation Commission). No wells, no additional agriculture, and only very limited single family home development is allowed in these areas, and only under special restrictions and circumstances.

8.1.9 Monitor FCGMA Groundwater Extractions to Ensure That They Do Not Exceed Adopted Projections for That Basin

The FCGMA requires semi-annual reporting of extractions from pumpers within the Agency as part of the measures instituted within Ordinance No. 5 (now Ordinance No. 8). These data are entered into a database maintained by the FCGMA. Individual operator annual extractions are compared against allowed allocations or irrigation efficiency at the end of each calendar year to determine whether well operators are within their allowed pumping. As discussed under the first

strategy on limitations of groundwater pumping, penalties are assessed for overpumping, and credits are posted for conservation or storage.

8.1.10 Implementation of Drilling and Pumping Restrictions

This strategy is discussed as part of several of the strategies above and is supported by the County Well Ordinance and the cooperation of water districts and well owners.

8.1.11 Metering of Groundwater Extractions

As part of the original Ordinance No. 5, extractions must be reported to the FCGMA on a semi-annual basis. Ordinance No. 3 (now Chapter 3 within Ordinance No. 8) required water flow meters to be installed at owners' expense on all groundwater pumps except domestic users on one acre or less. Not all pumpers have installed meters or use their meter readings to report extractions. Resolution 2006-1 requires periodic accuracy calibration of every water flow meter by independent testing agents. This Resolution also tightened requirements and imposed restrictions on well extraction reporting in addition to adding more strict penalties for non-compliance.

8.2 DESCRIPTION OF OTHER CURRENT STRATEGIES

There are several other groundwater management strategies that have been implemented within the FCGMA area that were not foreseen when the original management plan was formulated some 20 years ago. These include:

8.2.1 Fox Canyon Outcrop Expansion Area

A buffer zone ("Expansion Area") along the outcrops of the Fox and Grimes Canyon aquifers, which are adjacent to and outside of the FCGMA boundaries, was established in 1997. This zone was established to protect any land uses on the outcrop or within the Agency that might adversely affect groundwater recharge, groundwater extractions, or water quality.

8.2.2 Noble Spreading Basins

The Noble Spreading Basins (1995), across Los Angeles Avenue opposite UWCD's Saticoy Spreading Grounds, were constructed to store and recharge additional Santa Clara River water diverted at the upstream Freeman Diversion, particularly during wet periods. These relatively shallow basins were reclaimed gravel pits purchased by UWCD and reconfigured as water spreading basins. Water placed in the facility recharges both the Upper Aquifer System and the Lower Aquifer System. The ten-year average for the facility is 6,000 AFY, with individual years varying from 0 AF to 17,800 AF.

8.2.3 Las Posas Basin ASR Project

The FCGMA in 1994 approved Calleguas MWD's Las Posas Basin Aquifer Storage and Recovery (ASR) project as an Injection/Storage Facility. This allowed Calleguas MWD to receive Storage Credits for water recharged as part of the project. Conditions of the approval included registration of the injection/extraction wells, monthly reporting of injection/extraction volumes, water quality requirements for injected water, a limit on the amount of water in storage (300,000 AF), required points of extraction, a limitation to use the stored water only within Ventura County, periodic review of injection/extraction effects, and an agreement to halt operations if any conditions are not met. As of 2006, Calleguas MWD has stored over 60,000

AF of water through in-lieu deliveries to basin pumpers and direct injection. Although most extractions have been for testing and maintenance purposes, full-scale extractions occurred during January 2007 to supply customers during a scheduled maintenance shut-down of the supply line bringing State Water to Calleguas MWD.

8.2.4 Conejo Creek Diversion Project

The Conejo Creek Diversion Project (2002), constructed by Camrosa Water District just south of where Highway 101 crosses Conejo Creek, diverts flows from the creek and delivers the water to Pleasant Valley County Water District to meet local irrigation demands within the overdrafted Pleasant Valley basin. The water diverted from the creek is a combination of natural stream flow and recycled water released into the creek from wastewater treatment plants upstream. This diverted water replaces Lower Aquifer System pumping in the Pleasant Valley basin. The contractual amount of water from the diversion is 3,000 AFY (if available), although an average of 5,300 AFY has been diverted in the first four years of operations. These diversions may increase temporarily, but are likely to decrease over the next 20 years as the recycled water is used elsewhere by Camrosa Water District customers.

8.2.5 Supplemental M&I Water Program

The Supplemental M&I Water Program is operated through the Oxnard-Hueneme (O-H) Pipeline system. The joint UWCD-Calleguas MWD project uses FCGMA credits earned by Pleasant Valley County Water District from the Conejo Creek Diversion Project to supplement O-H water supply. This project effectively shifts Lower Aquifer System pumping in the Pleasant Valley basin to Upper Aquifer System pumping in the Oxnard Plain Forebay basin. The program is capped at 4,000 AFY and is only implemented in years when groundwater levels in the Forebay are sufficiently high to prevent harm to other Forebay pumpers. The program effectively reimburses Calleguas MWD for their investments in the Conejo Creek project, a precedent that may allow similar types of projects in the future.

8.2.6 Saticoy Wellfield

The UWCD Saticoy Wellfield (2005) was constructed adjacent to the UWCD Saticoy Spreading Grounds to pump shallow water from the recharge mound underlying the spreading grounds in wet years and deliver the water to users along United's existing agricultural pipeline system (Pleasant Valley and PTP pipelines). This pumping from the Oxnard Plain Forebay basin decreases the recharge mound, allowing more spreading and groundwater recharge from the basins during wet periods. The water produced by the pumping in the Forebay replaces LAS groundwater pumping along the Pumping Trough Pipeline (PTP) and Pleasant Valley (PV) Pipelines.

8.2.7 Importation of State Water

The County of Ventura holds a State Water allocation of 20,000 AFY administered by the California Department of Water Resources (DWR). This allocation is divided among UWCD, the City of Ventura, Port Hueneme Water Agency (as a sub-allocation of UWCD's portion), and Casitas MWD. UWCD uses its allocation to supplement recharge to the aquifers along the Santa Clara River within Ventura County. UWCD's 3,150 AFY allocation (UWCD's allocation was 5,000 AFY, but the Port Hueneme Water Agency acquired 1,850 AFY of the allocation) is ordered from DWR during normal and dry years for delivery to Lake Piru via stream releases from the DWR-operated Lake Pyramid downstream along Piru Creek. This State Water is then released from Lake Piru as part of UWCD's normal conservation release in the late summer and fall. As this water flows down Piru Creek and the Santa Clara River, a portion of it percolates into the groundwater basins along the river (Piru, Fillmore, and Santa Paula) and a portion reaches the Freeman Diversion for recharge to the Oxnard Plain.

This recharge is not credited by the FCGMA to UWCD directly, but based on many years of study, measurement, and computer modeling, the portion of the DWR purchased water that ultimately reaches the Freeman Diversion is credited as new or foreign water. The credits are placed in a UWCD-held trust fund that may be used in the future to solve common FCGMA management issues that are beneficial to the aquifers within the Agency. The Port Hueneme Water Agency's 1,850 AFY is delivered via Calleguas MWD's conveyance facilities. Except for 2,000 AF imported in 2002, no other portion of the 20,000 AFY entitlement has ever been imported to Ventura County, although annual capital costs continue to be paid to DWR to maintain this Allocation. Additional importation of State Water is discussed in section 10.0 *Potential Future Management Strategies*.

8.2.8 Additional Groundwater Monitoring

As saline intrusion has encroached further inland beneath the south Oxnard Plain, saline waters have moved eastward of the existing monitoring well network in some areas. In 2006, UWCD will install two additional nested monitoring well sites north of Mugu Lagoon, with funds obtained from a Department of Water Resources grant. These monitoring wells will be incorporated into the monitoring network and sampling protocol for the existing dedicated monitoring wells.

8.2.9 Calibration of Groundwater Extraction Meters

Resolution 2006-1 was adopted by the FCGMA Board that will phase-in a flow meter calibration and inspection program over three years. After the phase-in, each meter will be required to be checked at 3-year intervals.

8.3 EFFECTIVENESS TO-DATE OF CURRENT MANAGEMENT STRATEGIES

The management strategies applied over the past 20 years to combat seawater intrusion have resulted in significant changes in water levels and in water quality indicators in the FCGMA aquifers. Conditions in the Upper Aquifer System (UAS) have improved with groundwater elevations increasing to, or exceeding, acceptable levels and chloride-impacted water decreasing in both concentration and geographic extent in most areas. However, water quality conditions in the Lower Aquifer System (LAS) have worsened over this same time period. Specifically, LAS groundwater elevations in the southern portion of the Pleasant Valley Basin and southern Oxnard Plain Basin have decreased and remained well below sea level and salinity has increased in both concentration and geographic extent. This has occurred for two reasons. First, the combined UAS and LAS extraction in this area has exceeded levels the resource can support. Second, policies adding recharge to the UAS and switching pumping from the UAS to the LAS have relieved the stress on the Upper Aquifer but increased the stress on the Lower Aquifer.

The FCGMA policy of reduced pumping has had positive effects in all the aquifers. For pumpers using their Historical Allocation under Ordinance No. 5, there has been a pumping reduction in excess of the 15% currently required by the FCGMA. There have been only isolated incidents of pumping in excess of allocation, reflecting both the general acceptance of the pumping reductions and the stiff monetary penalty for overpumping. For agricultural pumpers using an Irrigation Efficiency calculation, pumping reductions have been even more dramatic. In a study using the FCGMA weather stations to calculate daily crop water demand, Agency-wide irrigation efficiency (measured by less reported water use compared to FCGMA-computed crop water demand) improved by about 30% during the first several years of the FCGMA pumping reductions (UWCD, 2002). The increased efficiency is consistent with the decreased extractions reported to the FCGMA over the last decade (see section 4.0

Groundwater Extractions). Widespread acceptance and installation of drip tape, micro sprinklers, mini sprinklers, leak repairs, computer controlled watering cycles, farm-operated weather stations to assist with irrigation frequency and duration, various ground-based moisture sensors and lysimeters, farmer and irrigation crew education, and a shift away from wasteful furrow irrigation or high volume sprinkler heads, along with reduction of tailwater losses have all contributed to the reduction in groundwater use.

One of the key hydrogeologic findings over the last 10 years indicated that a zone of lower conductivity (such as a fault or some other deformation) extends from the Camarillo Hills to Port Hueneme (aligned with the known location of the Simi-Santa Rosa fault in the Camarillo Hills) limiting the amount of recharge that can flow from the Oxnard Plain Forebay basin into the south Oxnard Plain and Pleasant Valley areas. This zone appears to be limited to the Lower Aquifer System, with no evidence that the lower conductivity zone extends upward into the Upper Aquifer System. In these areas of the LAS, extractions far exceed recharge, resulting in groundwater levels that have fallen to well below sea level from the ocean inland to the City of Camarillo. Three current projects recharge these critically overdrafted areas: diverted Santa Clara River water is delivered via the Pleasant Valley and Pumping Trough pipelines and diverted Conejo Creek water is delivered via the Conejo Creek project. These three projects deliver in-lieu recharge to the south Oxnard Plain and Pleasant Valley basins (the delivered surface water is used for irrigation in-lieu of pumping groundwater).

However, the Pumping Trough Pipeline (PTP) operated by UWCD provides mixed effects in reducing pumping in the Lower Aquifer System. The diverted Santa Clara River supplies delivered to PTP customers in-lieu of pumping groundwater have unambiguous benefits in helping to eliminate the pumping trough in the Upper Aquifer System and helping eliminate overdraft in the Lower Aquifer System. But the PTP project also has five LAS wells that provide irrigation water to customers along the pipeline when there are insufficient supplies in the Santa Clara River available for diversion and delivery. These wells were completed in the LAS because at the time the LAS was in better shape than the UAS. Since the UAS has substantially recovered from overpumping but the LAS has been severely depleted, these five LAS wells are no longer optimally-located; they now pump from the flank of the large pumping depression in the LAS of the south Oxnard Plain and Pleasant Valley basins. Thus, one of the previously-assumed solutions to reduce groundwater extractions within the pumping trough of the UAS has created new problems in the LAS. Some of this LAS pumping for the PTP project is being replaced by UAS pumping from the UWCD Saticoy Wellfield (located in the Oxnard Plain Forebay basin); this strategy should be maximized in the future.

One of the FCGMA strategies historically underutilized is the substitution of recycled water for groundwater pumping. The Conejo Creek project has begun the process of using recycled water which originates in the City of Thousand Oaks. Other recycled projects are not yet operational (e.g., see later discussion of the City of Oxnard's GREAT project).

The Ventura Regional Groundwater Model was used to test the future effectiveness of current projects to reduce the overdraft in the FCGMA basins. This analysis assumes that hydrological conditions of the past 50 years are similar to future conditions, that projects continue to be implemented as designed, and that FCGMA reported pumping is relatively accurate. This modeling indicates that when all current projects that implement the FCGMA Management Plan are operational, there will still be an overdraft in the basins within the Agency. With only current strategies in place, BMOs for groundwater levels would be met 51% of the time in the Upper Aquifer and 5% of the time in the Lower Aquifer (see Appendix B). This analysis is derived from the model Base Case, which uses reported pumping over the past 10 years as the basis for

modeled extractions. If actual pumping was higher than reported, then the model would have to be recalibrated to reflect this. A sensitivity analysis was conducted to examine the effect of understated pumping in the model (Appendix B, section A2.2.2 *Sensitivity Analysis – Understatement of Reported Extractions*), which indicated that if agricultural pumping was understated by 15% (caused by poorly-calibrated meters or inaccuracies in other reporting methods), results from the current model could be up to 15 feet too high in the Lower Aquifer (the aquifers would be in worse shape than modeling suggested). If the model was recalibrated to reflect this understatement of pumping, these results would be corrected.

It is clear both from the modeling results and from the observation that BMOs are not being met in many areas, and that additional management strategies and projects must be initiated to alleviate this continued overdraft. The following sections address this need.

9.0 MANAGEMENT STRATEGIES UNDER DEVELOPMENT

There are several projects at various stages of development that will further reduce water supply and water quality problems within the FCGMA. Some of these projects follow the original management strategies of the Agency, whereas others deal with issues not contemplated in the original management plan. The strategies are presented in the order of their impact on the aquifer (high impact strategies are discussed first), with projects under development discussed in this section and future strategies discussed in the following section. The ranking of both strategies under development and future strategies that were amenable to testing with the groundwater model is indicated in Table 8. For strategies that could not be directly evaluated with the groundwater model (because there was no change in the place or amount of recharge or pumping), other ranking factors are discussed with each strategy.

Strategy	*UAS ΔWL*	*Meet UAS BMOs*	*LAS ΔWL*	*Meet LAS BMOs*
Current Strategies		**51%**		**5%**
Barrier Wells	+11'	63%	+46'	48%
GREAT Project	-1'	51%	+38'	36%
Injection River Water	+1'	53%	+7'	11%
Shift Pumping UAS	-1'	50%	+8'	9%
Increase River Diversions	+3'	54%	+3'	8%
Addtl Recharge S Oxnard	+1'	53%	+4'	7%
Continue 25% Reduction	+1'	53%	+2'	7%
Import State Water	+2'	54%	+1'	7%
RiverPark Recharge	<1'	52%	<1'	6%
Shift Pumping NW Oxnard	<1'	51%	<1'	5%
All Strategies	**+15'**	**67%**	**100'**	**76%**

Table 8. Ranked results of groundwater modeling of management strategies amenable to evaluation with the groundwater model. The table indicates the average change in groundwater levels expected in each aquifer at the wells for which there is a BMO for each strategy. The table also indicates the average amount of time that groundwater levels were at or above BMOs for each aquifer (see discussion of this technique in section 6.0*Basin Management Objectives*).

9.1 GREAT PROJECT (RECYCLED WATER)

The GREAT (Groundwater Recovery Enhancement and Treatment) project is ranked highest of the projects under development because of its effectiveness in reducing Lower Aquifer overdraft (see Table 8). However, the most effective portion of the project would occur at 10 to 15 years from now, when all components of the project are scheduled to be in place.

9.1.1 Description

The project is being designed and implemented by the City of Oxnard. The project has three major components: 1) a new regional groundwater desalination facility; 2) a recycled water system to deliver water to M&I non-potable water uses within the City of Oxnard, to deliver water to agricultural users in the Pleasant Valley area, and to inject water as a barrier to seawater intrusion; and 3) conveyance of desalination backwash concentrates through a brine line to either the City's existing ocean outfall or the Ormond Beach area for coastal wetland restoration. Potable water supplies for the City would then be pumped from the Forebay by utilizing FCGMA credits earned from both direct recharge (barrier wells) and in-lieu recharge (M&I non-potable and agricultural deliveries). This Forebay supply could be pumped from existing Oxnard-Hueneme system UAS wells, existing City wells, and/or new City wells. The FCGMA would have to approve recharge and pumping facilities, as well as implement policies discussed later in this section.

The project will be constructed in phases, with project yield ramping up over time from around 5,000 AFY to more than 21,000 AFY. Actual timing of construction will depend upon projected growth in water demand and funding. This project implements the strategy of pumping groundwater from areas of the aquifer readily recharged and reducing pumping in areas of the aquifer that are more difficult to recharge. In addition to offsetting existing potable water demands with recycled water supplies, this is accomplished by supplying in-lieu and injected recharge to the Pleasant Valley basin and south Oxnard Plain areas where it is needed most. A similar amount of water would be pumped from the Oxnard Plain Forebay basin. This strategy moves a considerable amount of extractions from areas that are overpumped to the easily-recharged Oxnard Plain Forebay basin.

Because M&I non-potable and agricultural demand is lower in the winter and recycled water cannot be effectively utilized during that time, a direct recharge component is necessary to accommodate the winter quantities of recycled water. A configuration of injection wells along Highway 1 and Hueneme Road was examined using the Ventura Regional Groundwater Model; this conceptual configuration is discussed in the EIR for the GREAT Project (City of Oxnard, 2005). Injecting water during only a portion of the year is less effective than with full-time injection; the addition of supplemental waters to use for injection is discussed as another strategy of this management plan.

Two FCGMA policy issues need to be addressed relative to the GREAT project. The FCGMA has allowed a one-for-one earning of storage credits – one acre-foot of stored water equals one acre-foot of storage credits – that has been applied to such projects as Calleguas MWD's Las Posas ASR project. When water is injected into a groundwater barrier to contain saline intrusion, however, some of the injected water will likely be tainted by the saline waters. The policy question then becomes whether the entire injected water should earn one-for-one storage credits; this is largely a policy decision rather than a technical decision.

The other FCGMA policy issue relates to pumping the storage credits from the Oxnard Plain Forebay basin. Moving the location of pumping to the Forebay is beneficial to the Pleasant Valley and Oxnard Plain basins, providing that the added pumping stress in the Forebay can be accommodated. For other strategies that involve pumping in the Forebay (e.g., Saticoy Wellfield, Supplemental M&I Water Program), there is a caveat that pumping not occur when groundwater levels have dropped below a threshold that applies to the use of water from the Freeman Diversion as a grant condition from the State Water Resources Control Board (available Forebay storage of 80,000 AF, using two index wells). Such a caveat is also appropriate for the GREAT project. The City of Oxnard can accommodate such an operational requirement by shifting its pumping to wells in the Oxnard Plain just outside of the Forebay when groundwater levels are low in the Forebay. The FCGMA should implement a general policy for all projects that shift pumping from overdrafted areas to the Forebay.

In addition, there are water quality concerns with injection of recycled water. The GREAT project will be performing a Title 22 analysis to permit this injection, which is administered by the Los Angeles Regional Water Quality Control Board with input from the California Department of Health Services. Water quality monitoring will be required by the permit; the FCGMA should review any proposed monitoring and comment to the Regional Board as needed.

9.1.2 Potential Effectiveness

This planned GREAT project would implement one of the strategies likely to be successful in restoring groundwater levels in the Pleasant Valley and Oxnard Plain basins. As part of the EIR for this project, the Regional Groundwater Model was used to test the effects of the project. The project was tested both at the lower initial yield and at full implementation. The effectiveness of the project must be judged by balancing raising Lower Aquifer System water levels in the Pleasant Valley basin and south Oxnard Plain areas against lowering water levels in the Oxnard Plain Forebay basin. The groundwater model indicated water levels in the LAS beneath the southern Oxnard Plain basin and the Pleasant Valley basin would rise by as much as 70 feet, whereas UAS water levels in the Forebay basin would only drop by about 5 feet during wet periods and 20 feet during dry periods. Thus, the project will have to carefully balance the positive and negative effects on water levels. Potential mitigation of lowered water levels in the Forebay include inducing more recharge from existing facilities and from potential increased diversion rights at the Freeman Diversion. The results of the groundwater modeling suggest that BMOs for groundwater levels would be met 51% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 36% of the time in the Lower Aquifer (compared to 5% with current management strategies) with full construction of the GREAT project.

If current recharge is reduced in the Forebay because of required fish flows or other reasons, then the Forebay basin may not be able to accommodate increased pumping, particularly in dryer periods. The City of Oxnard will conduct a monitoring program as part of the GREAT project to measure effects of the project. It would be prudent for the FCGMA to have a written agreement on operation of the GREAT project to ensure long-term operation of the project would continue to meet Agency strategies.

9.2 SOUTH LAS POSAS BASIN PUMP/TREAT

This management strategy is ranked high because it is in a mature stage of design and the problem that it aims to help solve is an ongoing problem for the Las Posas basin that needs a rapid solution to prevent further water quality degradation.

9.2.1 Description

As discussed in section 5.1.3 *High Salinity Associated with High Groundwater Levels*, high groundwater levels in the South Las Posas basin have apparently dissolved salts from the unsaturated portions of the shallow aquifer and created a mound of water more saline than ambient groundwater. One potential mitigation measure would be to pump the saline groundwater from the shallow aquifer, creating space in the aquifer thus allowing less-saline winter storm water to percolate into the aquifer. Under the current conditions, the majority of these winter flows now bypass the recharge areas because there is no available storage in the shallow aquifer. If implemented, this strategy would involve the pumped saline water being blended with low-chloride water and/or desalinated before delivery to customers.

Ventura County Waterworks Districts #1 (Moorpark) and #19 (Somis) are working with the Calleguas MWD to design and fund such a pilot project in the South Las Posas basin. The pumping associated with such a project would be in excess of current FCGMA allocations and would require approval of the FCGMA Board prior to implementation. Under FCGMA Resolution 2003-03, the Board indicated that upon its review and approval, it may change or alter an allocation for pumping from the South Las Posas basin to accommodate a responsible entity that submits a plan to render this groundwater usable. A general FCGMA policy for these types of projects in the future is discussed in section 11.3 *Recommended Additions to FCGMA Policies.*

9.2.2 Potential Effectiveness

The effectiveness of this particular strategy can be evaluated using two criteria. The first is the overall reduction in salts in the South Las Posas basin because higher-salinity groundwater is extracted and treated, removing salts from the system. The improvement in water quality in the basin would depend upon the amount of groundwater extracted and the amount of water recharged versus the ability of the aquifer or other sources to contribute additional dissolved salts. Another measurement of effectiveness would be the efficacy of drawing down the shallow groundwater to create space for recharge of better quality rain water. Greater drawdown could create conditions more favorable to recharge thus allowing more “fresh water” into the basin. It could also create space for addition salt-impacted waters. Thus, there are several factors that control the effectiveness of removing salts by pumping and treating the groundwater.

It is not possible at this time to adequately combine the factors to determine overall potential changes in water quality, although it is likely that dissolved salts removed during extraction and treatment would remove at least a portion of the salt load in the basin. Further analysis of nature and extent of the of the salts, quantification of the salt inputs (for example, mass balance), and evaluation of potential removal efficacy may be necessary to estimate the potential success of this strategy.

9.3 DEVELOPMENT OF BRACKISH GROUNDWATER, PLEASANT VALLEY BASIN

This strategy is also highly ranked because it can be implemented relatively quickly, may prevent water quality degradation in the northern Pleasant Valley basin, and would reduce pumping in the middle of the largest pumping depression in the Pleasant Valley basin.

9.3.1 Description

There are additional areas along Calleguas Creek besides the South Las Posas basin where groundwater has elevated salinity. Base flow from the Arroyo Las Posas has migrated completely across the South and East Las Posas basins and into the northernmost Pleasant Valley basin, providing a source of recharge to this portion of the Pleasant Valley basin. However, this recharge water has created water quality problems for groundwater pumpers. There are additional areas along Calleguas Creek besides the South Las Posas basin where groundwater has elevated salinity. Base flow from the Arroyo Las Posas has migrated completely across the South and East Las Posas basins and into the northernmost Pleasant Valley basin, providing a source of recharge to this portion of the Pleasant Valley basin. However, this recharge water has created water quality problems for groundwater pumpers. City of Camarillo wells in this area have experienced increased salts as groundwater levels have risen over the last decade (Figure 21), similar to the condition described in section 9.2 *South Las Posas Basin Pump/Treat*.

It is not yet clear if this recharge water from the Arroyo Las Posas will create a mound of poorer-quality groundwater that would move out into the main portion of the Pleasant Valley basin under recharge conditions. This would depend upon how well-connected the recharge area is to the main portion of the LAS in the Pleasant Valley basin. The City of Camarillo is considering a strategy to move some of its current pumping from the area of the LAS pumping depression in the central portion of the Pleasant Valley basin to the northern portion of the basin where rise in poorer-quality groundwater is being observed. Under this plan, the poorer-quality water would be extracted and desalinated in a similar manner to the South Las Posas basin project.

The City of Camarillo has assessed the feasibility of constructing a Groundwater Treatment Facility that would be located in the Somis Gap area of the Pleasant Valley Basin (Black and Veatch, 2005). The study determined the project to be technically feasible and would allow Camarillo to halt pumping from an area of the LAS with depressed groundwater levels and instead pump in an area of rising groundwater levels.

Camrosa Water District is considering another type of project that potentially develops the use of brackish groundwater. In an area of the eastern portion of the Pleasant Valley basin near California State University, Channel Islands along Calleguas Creek, Camrosa has been studying the possibility of extracting poor-quality Upper Aquifer(?) water, treating it, and putting it in their delivery system. This water, some of which was used historically, has risen to relatively high levels. Water quality monitoring in the adjacent main portion of the Pleasant Valley basin indicates that this poorer-quality water may not be migrating into the Lower Aquifer of the Pleasant Valley basin. Thus, there is the possibility this water could be pumped without lessening the supply to the Pleasant Valley basin. Some of this area is outside the FCGMA boundary.

Previously, both the potential Camarillo and Camrosa projects would have to be pumped using existing allocations if the well was within the FCGMA boundary. However, as FCGMA policy has evolved over time, pumping of poorer quality groundwater without an allocation has been evaluated on a case-by-case basis. A coordinated effort between the FCGMA and proponents of such projects in the Pleasant Valley basin should be undertaken to determine whether these projects are within this policy. Also, a feasibility analysis of these projects may be necessary to determine the potential net effects to the area and evaluate whether additional pumping would improve or degrade current water quality conditions. This FCGMA policy issue is discussed in more detail in Section 11.3 *Recommended Additions to FCGMA Policies.*

9.3.2 Potential Effectiveness

Pumping and removing salts from groundwater is an effective means of reducing the salt load in a watershed. If the areas from which the salts are removed are hydrologically connected to the main portions of the groundwater basins within the FCGMA, then this removal of salts could also have a positive impact. If the pumping of this poorer-quality groundwater does not affect the main groundwater basins, then these projects would have a neutral effect on the main groundwater basins while increasing the supply of available water. However, if these projects reduce the recharge to the FCGMA groundwater basins without also providing a significant benefit to water quality in these basins, than the projects could have a negative impact on the groundwater basins within the Agency. Any such projects would require monitoring of both water levels and water quality to determine their effect on adjacent areas of the basin.

The potential City of Camarillo project also has an element of moving existing pumping from the area of the Pleasant Valley basin near the Camarillo airport, which has the most-depressed groundwater levels, to an area more favorable for recharge along Arroyo Las Posas. The portion of the potential project related to the pumping reduction was tested using the Ventura Regional Groundwater Model (see Appendix B). Model results indicate that the worst portion of the pumping depression would be decreased considerably in size, leaving a smaller depression in the southern Pleasant Valley basin. The other element of the project, increasing pumping along the Arroyo Las Posas, cannot yet be tested effectively with the model. The model does not now capture the hydrogeology of the northernmost portion of the Pleasant Valley basin – a recharge area of the basin near Somis that is now apparent from monitoring data needs to be better understood and integrated into the model.

9.4 NON-EXPORT OF FCGMA WATER

This strategy is important in preventing additional un-authorized pumping within FCGMA basins, where additional strategies are required to mitigate current pumping. The strategy can also be implemented rather rapidly through FCGMA actions.

9.4.1 Description

Current policies and ordinances limit the use of groundwater produced from within the FCGMA to only those areas within the boundaries of the Agency with only rare exceptions. In 1997, original or prior historical uses outside the FCGMA boundary that were not known in 1985 were allowed through grandfathering of these uses. Since 1997, however, recent aerial photo analysis of new developments and additional crops grown near the FCGMA boundary indicate that there is a “fringe” of crops or additional lands being irrigated outside the boundary that are apparently being irrigated by groundwater produced from within the FCGMA. In most cases, these crops are contiguous across the FCGMA boundary from inside the boundary to outside the boundary; in some cases, the crops are grown on a parcel that spans the boundary. Some of these crops may have been planted in earlier years, but air photo analyses indicate that a portion of the crops have been planted in the last several years.

When the FCGMA was formed, it was envisioned that some undeveloped acreage within the FCGMA would be developed in the future and would create a new water use. A baseline allocation of one acre-feet per acre of water was to be allocated to any newly-developed lands. However, this baseline allocation was only for land within the FCGMA boundaries. If groundwater produced from inside the FCGMA boundaries was used on adjacent hillsides outside of the FCGMA boundary, this new irrigation would provide considerable extra draft on

the groundwater basins. This additional draft on the aquifers is counter to all the FCGMA policies aimed at reducing pumping in the overdrafted aquifers.

Preventing this additional draft on the aquifers is clearly a high priority of this management plan. It appears that current ordinances and policies of the FCGMA may be sufficient to deal with its export issue, but this should be reviewed. What is needed is a regular procedure to both educate pumpers of the export policy and to identify areas where this policy has been violated. It is recommended that the FCGMA developed such a procedure and determine how to address past and current violations of this policy.

9.4.2 Potential Effectiveness

Preventing additional draft on the groundwater basins of the FCGMA is equivalent in effectiveness to pumping reductions. Many of the areas where water is exported across the FCGMA boundary are adjacent to the Pleasant Valley and Las Posas basins where lowered groundwater levels are particularly apparent. Therefore, much of this additional draft on the groundwater basins is occurring in the areas of the aquifer that can least sustain them. This fact increases the effectiveness of preventing these water exports.

9.5 CONTINUATION OF 25% PUMPING REDUCTION

This strategy is already in place, but is being reviewed by the FCGMA Board.

9.5.1 Description

Current FCGMA management strategies include the 25% reduction in pumping allocation that was called for in the original management plan. This management strategy is to continue the planned reductions as they were originality intended -- the planned reduction to 20% of allocation occurring during 2007 (delayed from 2005) and the 25% reduction occurring according to the 2010 schedule. These reductions were to stay in force until the FCGMA basins are no longer in overdraft and there is sufficient water for recharge to compensate for the increased pumping created when the restrictions are removed.

9.5.2 Potential Effectiveness

The original 25% pumping reduction has had the effect of reducing both M&I pumping and agricultural pumping (see section 8.3 *Effectiveness To-Date of Current Management Strategies*). The effect of continuing the phased reductions to the full 25% reduction was modeled using the Ventura Regional Groundwater Model. This model scenario assumed that pumping reductions beyond the current 15% reduction were applied only to M&I pumping; it was assumed that any agricultural wells currently using their reduced pumping allocation for FCGMA reporting would simply shift to an efficiency calculation, rather than further reduce pumping. The results of the modeling suggest that these additional pumping reductions, which amount to 3,800 acre-feet per year throughout the FCGMA, would raise groundwater levels in the Upper Aquifer System by a little over one foot at the Port Hueneme coastline and raise Lower Aquifer System groundwater levels by an average of a little over two feet. BMOs for groundwater levels would be met 53% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 7% of the time in the Lower Aquifer (compared to 5% with current management strategies).

9.6 RIVERPARK RECHARGE PITS

This strategy is being implemented through a Joint Powers Agreement between the City of Oxnard and United Water Conservation District.

9.6.1 Description

Decades of relatively unrestricted deep gravel mining beginning in the 1950s created a series of large open pits (formerly owned by S.P. Milling) along the Santa Clara River within the Oxnard Plain Forebay basin that are now unused and expose groundwater in the pits to evaporation and potential contamination. As part of an agreement between the City of Oxnard, a developer (RiverPark), the FCGMA, County of Ventura, and UWCD, these pits are being stabilized and urban surface drainage is being diverted away from the pits. If all the work on the pits is accomplished appropriately, the plan is to have UWCD operate the pits as a recharge and storage facility. UWCD would build a water conveyance system that would allow flood flows diverted at the Freeman Diversion to be transported to the RiverPark pits for recharge. These facilities would allow increased diversions of the Santa Clara River; silt-laden river water could be diverted and recharged, water that now must be bypassed and which flows to the ocean following large rainstorms.

Use of the RiverPark pits serves two purposes for the aquifer. First, the facilities will allow additional recharge to the aquifers from silty water that is now bypassed at the Freeman Diversion. Second, the project moves a portion of the Forebay recharge further down-gradient in the basin, away from the recharge mound that forms in the upgradient portions of the Forebay basin beneath the UWCD Saticoy Spreading Grounds. Thus, more recharge water will infiltrate into the Forebay during wet years, a time when a recharge mound builds in the upgradient portion of the basin and reduces recharge rates in existing spreading facilities. No FCGMA policy changes would be required to implement this project.

9.6.2 Potential Effectiveness

UWCD has analyzed the effectiveness of the RiverPark recharge project by combining UWCD's surface water model with the Ventura Regional Groundwater Model. This modeling suggests the yield of the project could be as much as 4,000 AFY (combined with a higher diversion rate at the Freeman Diversion), with the annual yield ranging from 400 AF in dry years to 11,500 AF in wet years. This additional recharge in the Forebay will raise water levels in the basin, which helps pressurize the greater Oxnard Plain. In addition, higher water levels in the Forebay basin will help mitigate the effects of other projects described in this management plan that rely on increased pumping in the Forebay.

The results of the groundwater modeling suggest that BMOs for groundwater levels would be met 52% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 6% of the time in the Lower Aquifer (compared to 5% with current management strategies).

10.0 POTENTIAL FUTURE MANAGEMENT STRATEGIES

Groundwater modeling indicates that additional management strategies are required to eliminate overdraft in both Upper Aquifer and Lower Aquifer System aquifers and to prevent further seawater intrusion along the coastline and saline intrusion in more inland areas. A variety of potential future strategies are ranked below, with those that are the most effective and

can be implemented the soonest discussed first. Because of the large number of strategies, they are separated into those that can be implemented within 5 years, 10 years, 15 years, and greater than 15 years.

10.1 5-YEAR STRATEGIES

The following strategies that can be implemented within five years are ranked by order of effectiveness and/or importance.

10.1.1 5-Year Update of FCGMA Management Plan

10.1.1.1 Description

It is recommended that this Plan be updated every five years. This update should include a status of how the BMOs are being met, effectiveness of strategies that have been implemented, status of other recommended strategies, and recommendations for any additional management strategies.

10.1.1.2 Potential Effectiveness

Updating the Plan every five years will be an effective milestone for the FCGMA to evaluate and re-evaluate its course of action. This will keep the FCGMA's goals and its successes and failures front and center where they belong.

10.1.2 A Plan To Shift Some Pumping Back to Upper Aquifer System

10.1.2.1 Description

One of the initial groundwater management strategies for the FCGMA was to shift pumping to the Lower Aquifer System from the Upper Aquifer System to relieve pumping stresses that created a pumping trough in the UAS on the Oxnard Plain basin. This was accomplished by requiring new and replacement wells to be drilled in the LAS. Now that it is clear that the LAS cannot accommodate all this new pumping, it would be prudent to move some of the LAS pumping back to the UAS. However, this must be done very carefully to prevent a shift that would again create problems in the UAS.

A shift in pumping back to the UAS has already been initiated through County well permitting requirements. However, this shift cannot be uniformly enforced across the basins within the FCGMA. A detailed plan must be formulated that takes into account local recharge sources, hydrologic connection between portions of the basin, and current/future in-lieu recharge projects. This should be accomplished through use of the Ventura Regional Groundwater Model in fine-tuning the details of this plan, with the FCGMA, VCWPD, and UWCD working together.

10.1.2.2 Potential Effectiveness

By shifting pumping from the LAS to the UAS in areas where the Lower Aquifer System is not readily recharged could substantially raise groundwater levels in critical areas of the basins. This strategy only works, however, if the increased UAS pumping can be accommodated by the shift in pumping. For this reason, a sophisticated tool such as the Ventura Regional Groundwater Model is required to predict where and how much pumping should be shifted.

For an indication of how this strategy might work, 5,000 AFY of Lower Aquifer pumping was moved to the Upper Aquifer in the triangular area of the south Oxnard Plain from the Port

Hueneme zone of low conductance (fault?) to the western edge of the Pleasant Valley basin. The results of the groundwater modeling suggest that BMOs for groundwater levels would be met 50% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 9% of the time in the Lower Aquifer (compared to 5% with current management strategies) – raising Lower Aquifer water levels at BMO wells an average of 8 feet (Table 8).

10.1.3 Protect Current Sources of Recharge

10.1.3.1 Description

Protecting current sources of recharge to the FCGMA basins is particularly important as we face additional groundwater management problems. Maintaining Santa Clara River flows and water quality has been a focus for Ventura County over the past decade. The County of Ventura and UWCD went to court in the late 1990s to ensure that increasing land development and water use in the Santa Clarita area of Los Angeles County did not jeopardize Santa Clara River flows across the County line into Ventura County. More recently, local water agencies and especially the farming community have expressed concerned about rising chlorides from waste water discharges coming from Los Angeles County. It is very important to the FCGMA to continue to protect this important source of groundwater recharge through support of local agencies who deal directly with these issues.

On Calleguas Creek, where a portion of the flow originates from discharges produced by wastewater treatment plants, downstream users have come to rely on the increased flows in the Creek for recharge. Agreements on wastewater discharges flowing down Arroyo Santa Rosa resulted in the Conejo Creek project. Similar flows along the Arroyo Las Posas provide recharge to the Las Posas basins and the northern Pleasant Valley basin. The Arroyo Las Posas flows are augmented by discharges from the Simi Valley and Moorpark wastewater treatment plants and from dewatering of shallow groundwater in western Simi Valley. Similar to the Santa Clara River, maintenance of these flows is necessary to recharge the downstream groundwater basins. As such, the quantitative effects of shallow groundwater extraction in the Las Posas and northern Pleasant Valley Basins may need to be evaluated for the potential impacts to downstream surface water flows.

10.1.3.2 Potential Effectiveness

The current sources of recharge to the groundwater basins within the FCGMA are essential not only in maintaining current management strategies but also in implementing future strategies. Without protecting current recharge sources, the overdraft within the FCGMA could increase and negate some of the benefits realized by projects and strategies that have been very successful to date. Therefore, this strategy is one of the most effective in reducing overdraft, and is an essential FCGMA strategy.

10.1.4 Limitation on Nitrate Sources in Portions of the Oxnard Plain Forebay Basin

10.1.4.1 Description

High nitrate concentrations are present in groundwater in portions of the Oxnard Plain Forebay basin (see section 5.1.4 *Nitrate in Groundwater*). The source of a portion of this nitrate is from fertilizer use on overlying crops. A thick vadose zone (unsaturated zone) between the crops and the groundwater table allows natural processes to degrade some of the nitrate before it percolates with irrigation waters down to groundwater. Gravel pits within the Forebay were generally mined to five feet above historic groundwater levels, with reclamation plan restrictions

on growing high-nitrate use crops within the mined pits where the vadose zone is so limited. As reclamation is completed, however, there are no longer crop restrictions. Thus, high-nitrate crops could be grown in these former gravel basins with a limited vadose zone.

The FCGMA should take a leading role in preventing further nitrate contamination in the Forebay. The FCGMA should work with land use planners and the Regional Water Quality Control Board to ensure that high-nitrate crops are not grown in areas with a limited vadose zone caused by gravel mining.

10.1.4.2 Potential Effectiveness

Limiting sources of nitrate is the most effective method of reducing nitrate in groundwater. Because nitrate is a primary drinking water contaminant that can cause serious adverse health effects and because the Forebay is a primary source of drinking water for consumers across the Oxnard Plain, limiting sources of nitrate should be a high priority for the FCGMA.

10.1.5 Policy on Recovery of Credits from Oxnard Plain Forebay Basin

10.1.5.1 Description

There are several management strategies that involve increased pumping in the Oxnard Plain Forebay basin to either supply water to overdrafted areas (e.g., Saticoy Wellfield) or to recover FCGMA credits earned by reducing pumping in overdrafted areas (e.g., Supplemental M&I Water Program, GREAT project). Using the Forebay in such a manner is definitely beneficial to both the Pleasant Valley and Oxnard Plain basins – however, it must be done in a manner such that the added pumping stress in the Forebay can be accommodated. For the Saticoy Wellfield and the Supplemental M&I Program, there is a caveat that pumping not occur when groundwater levels have dropped below a certain threshold. This threshold is the same as the grant condition applied to the use of water from the Freeman Diversion by the State Water Resources Control Board – that there is no more than 80,000 AF of available storage in the Forebay. In practice, this means that the average of combined groundwater levels of two index wells in the Forebay be above a certain level.

To assure a uniform policy, the FCGMA should implement a general policy for all projects that use FCGMA credits to shift pumping from overdrafted areas to the Forebay. It is recommended that this policy follow the State Board criteria discussed above and delineated in Table 9, or equivalent criteria if these wells are not available in the future. In addition, pumping using these credits should not adversely impact other pumpers in the basin. How these adverse impacts are defined will depend upon the specifics of each project and will have to be detailed when individual projects are approved by the FCGMA. It is also recommended that the FCGMA establish a policy for prioritizing the types of projects that can use transferred credits to pump in the Forebay. This will be especially important if there is more demand for these transfer projects than the Forebay can accommodate.

Wells Used	*Groundwater Elevations*
2N/22W-12R1 2N/22W-22R1	>17 ft above msl for combined groundwater elevations

Table 9. Criteria for using Credits for extraction in the Oxnard Plain Forebay basin.

10.1.5.2 Potential Effectiveness

Shifting pumping from an impacted area to the Forebay through the use of FCGMA credits is a very effective strategy, providing that this pumping doesn't adversely impact the Forebay. Using the criteria outlined in the previous paragraph, Forebay impacts can be avoided or mitigated.

10.1.6 Verification of Extraction Reporting

10.1.6.1 Description

Meters are required to be installed on all but domestic wells by Chapter 3 of Ordinance 8, although not all pumpers have installed meters or use their meters for reporting extractions. In addition, all extractions are self-reported and the accuracy of FCGMA extraction records relies on correct self-reporting. To ensure the accuracy of extraction records, which are used by the FCGMA and others to determine the changing pumping stress on the aquifers in the FCGMA, it is recommended that the FCGMA make periodic random checks on a small number of meters annually to ensure that meters are correctly installed and that the extractions reported by pumpers to the FCGMA correctly reflect actual meter readings.

10.1.6.2 Potential Effectiveness

The accuracy of FCGMA reporting records is important for extraction trends, determination of credits and efficiency, and overall compliance with pumping reductions. It is essential that all pumpers believe that everyone is "playing by the rules" and a verification procedure could help ensure that pumpers continue to believe that everyone is in this together.

10.1.7 Separate Management Strategies for Some Basins

10.1.7.1 Description

The initial FCGMA Management Plan treated all the FCGMA basins the same in that the same rules applied to all basins. We now know more about how these basins are interconnected and whether some of the basins have unique circumstances. For example, we know that the East Las Posas basin is largely hydraulically disconnected from both the West Las Posas basin and the northern Pleasant Valley basin. However, these basins also share some common elements; for instance, the East Las Posas basin and northern Pleasant Valley basin share a common recharge source, the Arroyo Las Posas. One element common to all the FCGMA basins is that they are overdrafted. Current FCGMA management strategies such as pumping reductions are thus appropriate to all the basins.

The FCGMA has considered localized management strategies. In the South Las Posas basin, for instance, a project to pump and treat poor-quality water without an allocation has been considered by the FCGMA Board. The strategy of moving pumping away from coastal areas applies largely to the Oxnard plain basin.

New strategies in this Management Plan are also applied to specific situations in each basin. The Management Plan for the East Las Posas basin, included as Appendix C, addresses issues specific to the operation of Calleguas' ASR project. This plan is adopted as part of the overall FCGMA Management Plan and the FCGMA Board will consider how its elements will be integrated into FCGMA ordinances. Likewise, the strategies for potentially pumping shallow groundwater along Calleguas Creek are also specific to the Pleasant Valley basin. The basin management objectives of this plan are also specific to each basin.

The FCGMA-wide strategy of pumping reductions across all FCGMA basins engenders the most discussion of whether this is appropriate in all cases. As discussed in section 9.5 *Continuation of 25% Pumping Reduction*, these reductions are appropriate across all FCGMA basins as long as there is overdraft in all basins. It would be appropriate, however, to re-evaluate any future additional pumping reductions by examining each basin separately.

10.1.7.2 Potential Effectiveness

The current strategy of allowing specific policies to address individual basin problems is the most effective means of addressing the overdraft and water quality problems within the FCGMA.

10.1.8 FCGMA Boundary

10.1.8.1 Description

The FCGMA boundary is defined as the outer edge of Fox Canyon Aquifer. In most areas, this outer edge is either the outcrop of the Fox Canyon Aquifer (such as along the north and east flanks of the Las Posas basin) or is the point where the Fox Canyon Aquifer onlaps older rocks (such as along the east side of the Pleasant Valley basin). However, along the western boundary of the FCGMA, it is defined as the western edge of the Oxnard Plain Forebay and Oxnard Plain basins (west of which the Fox Canyon Aquifer is not identified). Thus, this western boundary is also the boundary between the Oxnard Plain and Mound basins or the Oxnard Plain Forebay and Santa Paula basins.

Recent work done as part of the Santa Paula Basin Stipulated Judgment has moved the southern boundary of the Santa Paula basin farther north to coincide with the current known location of the Oak Ridge fault. This boundary of the Santa Paula basin was agreed to by experts working for the parties in the Santa Paula Basin Stipulated Judgment, including UWCD, the city of San Buenaventura, and the Santa Paula Basin Pumpers Association. In addition, UWCD groundwater staff have carefully monitored groundwater elevations in wells on both sides of this Santa Paula basin boundary and have confirmed that groundwater elevations south of the adjudicated basin boundary respond to recharge operations in the Oxnard Plain Forebay basin, whereas groundwater elevations to the north of the boundary do not. In addition, there is a significant discontinuity in groundwater elevations from one side of this boundary to the other.

The practical effect of this change in the Santa Paula basin boundary is that there is now a small region between the old and new boundary of the Santa Paula basin (Figure 28) that is not managed under either the Santa Paula Basin Stipulated Judgment or FCGMA rules and regulations. Because this area is in hydrologic continuity with the remainder of the Oxnard Plain Forebay basin, it would be appropriate to move the FCGMA boundary slightly north and east to coincide with the reinterpreted boundary of the Santa Paula basin and to reflect the reality of the continuity of this area with the Oxnard Plain Forebay basin. It is recommended that the FCGMA consider making this boundary change based on the technical information available.

10.1.8.2 Potential Effectiveness

By allowing a strip of land to be unmanaged through either the Santa Paula Stipulated Judgment or the FCGMA, it is possible to site wells on this strip of land and directly benefit from the significant recharge that takes place in the Oxnard Plain Forebay basin, meanwhile adversely affecting downgradient portions of the aquifers that rely on this recharge to repel seawater intrusion. By bringing this area into the FCGMA, wells sited in a strip of land will appropriately be subject to FCGMA extraction allocations and other management strategies. If the land described here is not brought into the FCGMA, it could invite unmanaged pumping that would adversely affect the basins within the FCGMA.

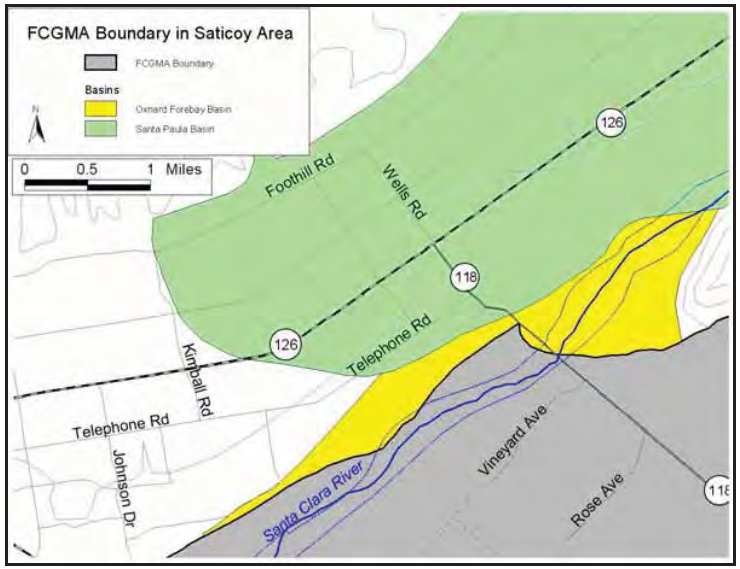


Figure 28. Area southeast of Santa Paula basin where FCGMA boundary is not coincident with current basin boundaries. The yellow area represents the portion of the Oxnard Forebay basin which is currently outside of the FCGMA.

10.1.9 Irrigation Efficiency Calculations

10.1.9.1 Description

Current FCGMA policies allow agricultural pumpers to meet a crop efficiency standard for their irrigation as an alternative to the Historical or Baseline allocation and credit program. This option is called the Irrigation Efficiency allocation. FCGMA efficiency calculations are based on daily information from a set of weather information gathering stations maintained across the FCGMA. Water demand for an index crop (cool season grass) is calculated daily. A crop factor is then applied to this index water demand to adjust the required water demand downward for four major categories of crops grown within the FCGMA. The final step in calculating crop irrigation efficiency is to adjust for 80% irrigation efficiency by taking the annual allowed water demand for each of the four major crop types and allowing an extra 20% water use for salt leaching and irrigation-system inefficiencies. The Irrigation Efficiency allocation was intentionally designed to make it possible for growers to sustain profitable agriculture within the FCGMA, but at the same time raise awareness of water conservation. The FCGMA should review the effectiveness of the efficiency allocation periodically to ensure that it being equitably applied.

In practice, Irrigation Efficiencies that pumpers report to the FCGMA are as a rule quite high – 100% to as much as 300% (water use as little as one third of estimated demand). This

suggests the method of calculating Irrigation Efficiency may not be appropriate. Improving the method would not affect the vast majority of pumpers who now report high efficiencies. However, it may identify any pumpers who are not using irrigation water efficiently by making it more difficult for them to reach the minimum required efficiency. It is recommended that the FCGMA Board consider a strategy to examine the method of calculating Irrigation Efficiency. Topics to consider might include adjusting crop demand for more specific crops, re-examining the 80% efficiency requirement, and ensuring that acreages reported be actual irrigated acreage rather than total owned acreage.

10.1.9.2 Potential Effectiveness

It is not clear exactly what amount of reduction in agricultural pumping would occur by adjusting the Irrigation Efficiency calculation. As documented elsewhere in this Management Plan, agricultural pumping reported to the FCGMA has been reduced by as much as 30% since the FCGMA pumping restrictions were initiated. Thus, most agricultural pumpers have apparently increased their irrigation efficiency substantially over the last 15 years. As discussed above, the vast majority of those efficient pumpers are unlikely to be affected by any changes in the Irrigation Efficiency calculation. However, changes in the efficiency calculation might affect those pumpers who have not already improved their irrigation efficiency.

10.1.10 Additional Storage Projects in Overdrafted Basins

10.1.10.1 Description

Aquifer Storage and Recovery (ASR) projects, such as the Las Posas Basin ASR project, provide benefits to an overdrafted basin because water stored in the basin raises groundwater levels above what they would be without the project. The water is not permanently devoted to the basin, but is removed from time to time, generally during periods of water shortage in droughts or emergencies. In practice, the water generally remains in storage for multiple years and is not completely removed during extraction periods. Thus, there is a long-term benefit to the basin. Such projects need to be carefully designed so that neither recharge nor recovery adversely affects other users in the basin. The recovery periods generally cause a significant decline in water levels in the vicinity of the ASR wellfield, especially if the ASR is operated in a confined aquifer setting.

ASR projects are most effective in areas where groundwater levels have been substantially lowered by overdrafting and where the physical properties of the in-situ geologic formation are amenable to both efficient injection and efficient extraction. Within the FCGMA, the Pleasant Valley and south Oxnard Plain areas are both candidates for ASR projects under current conditions because groundwater elevations are continuously below sea level due to overpumping and the geologic formations in these areas have relatively high permeability and transmissivity (e.g., Densmore, 1996; Hanson et al., 2003). To make this strategy effective, saline intrusion currently evident in the south Oxnard Plain would need to be hydrologically isolated from any ASR project to protect the stored water from degradation and to prevent additional intrusion of saline waters during extraction of the stored water. An ASR project could potentially be paired with a barrier well project (discussed in section 10.3.1 *Barrier Wells in South Oxnard Plain*).

The available storage space in the Pleasant Valley and southern Oxnard Plain basins has not been rigorously calculated. The amount of water that has been extracted from coastal areas in excess of recharge has been calculate as about one million acre-feet since the 1950s (UWCD, 2006), with permanent loss of aquifer storage capability from resulting subsidence of about 200,000 AF. The remaining 800,000 AF of potential storage space in the aquifer has been

partially refilled by intruded seawater, but there remains a large amount of potential aquifer storage space available.

10.1.10.2 Potential Effectiveness

Storage projects can be effective in restoring groundwater levels in overdrafted basins. However, the restoration only occurs during the period when water is stored in the basin. For many storage projects, the period of storage can be many years and not all the stored water may be removed during the extraction phase of the project – in that case, there is a long-term positive effect on the basin.

There are two issues that must be addressed with any storage project to ensure that the project does not adversely impact a basin: 1) the storage project must not interfere with recharge to the basin by creating groundwater levels so high that there is rejected natural and artificial recharge; and 2) extraction of stored water must not adversely affect the basin and other pumpers by pulling in poor-quality water, dewatering clays and creating subsidence, or creating large cones of depression around project extraction wells that prevent nearby pumpers from using their wells efficiently. Mitigation of such potential impacts may be feasible. Higher groundwater levels from storage projects may also mask continuing overdraft in a basin, so it is essential to continually determine what the basin condition would be without the storage project. Such safeguards are part of the East Las Posas Basin Management Plan (Appendix C) with regards to the Las Posas Basin ASR project.

10.1.11 Penalties Used to Purchase Replacement Water

10.1.11.1 Description

The FCGMA charges a penalty to pumpers for extracting more water than is allowed under the various allocations (Historical, Baseline, Irrigation Efficiency). Up to 2006, this has not generated significant revenue because few pumpers have exceeded their allocation. There may be circumstances in the future, however, where this may not be true. The increased groundwater use caused by the over-pumping could be offset by using the fees generated by penalties to purchase replacement water for the extracted groundwater. This is a strategy used by the Orange County Water District, where the penalty is called a Basin Assessment Fee. The FCGMA has several options to obtain additional water, including purchasing unused portions of Ventura County's State Water Allocation, paying M&I users to increase their imported/groundwater blend, and purchase of water through a variety of programs from the State or others such as turn-back pool water, Dry-Year Purchase Program, and other programs. This water could be delivered through either conveyance down the Santa Clara River or Calleguas MWD's pipeline, depending upon how the water was purchased and used.

10.1.11.2 Potential Effectiveness

A FCGMA policy to purchase water to replace over-pumped groundwater would have a direct effect on the aquifers. If the replacement was done judiciously, more water could be purchased than was originally pumped and/or the water could be used for recharge particularly stressed areas such as the southern Oxnard Plain basin or the Pleasant Valley basin. Thus, the replacement water could actually improve groundwater conditions.

10.1.12 Additional Water Conservation

10.1.12.1 Description

There is a growing move to require the use of recycled water to replace non-potable uses in new developments in California. The FCGMA could encourage local cities and other planning agencies to require a dual plumbing system (where it meets plumbing code) in new developments where it is practical to deliver recycled water of suitable quality. The FCGMA could make this policy known to the permitting agencies through both a resolution sent to these organizations and by commenting on this issue when reviewing EIRs and other planning documents. This policy would be consistent with the requirements in some areas within the Agency, such as the County policy that requires all new golf courses to use 100% reclaimed water and the City of Camarillo that requires dual plumbing systems in new larger developments.

Another water conservation strategy is to require maximum feasible infiltration of stormwater within a new development (Low Impact Development). This strategy is only effective when the development overlies a recharge area for the aquifer. When a development overlies perched water or sealing clay near the surface, the infiltrated water does not benefit the aquifers.

10.1.12.2 Potential Effectiveness

The effectiveness of this policy in reducing pumping depends upon the amount of groundwater that would otherwise be pumped from groundwater and delivered to the project. Many water purveyors within the FCGMA serve a blend of groundwater and imported water, so the pumping savings would be in the groundwater component. The savings would also depend upon the amount of non-potable water needs or uses within these projects. Where there is substantial landscaping in a new project, for example, the savings in potable water would be more substantial. In developments that require a dual plumbing system, there have been estimated savings of 30% to 40% in potable water use just from outdoor landscaping.

As discussed above, the effectiveness of maximizing recharge of stormwater can be variable. When a development is located in a basin such as the Oxnard Plain Forebay, percolation of rain is an important component of recharge and should be protected. In areas where percolated surface water does not reach the aquifers, the strategy is not effective.

10.1.13 Shelf Life for Conservation Credits

10.1.13.1 Description

The initial 1985 FCGMA Management Plan set the policy that when a well operator pumped less than his allocation in any particular year, Conservation Credits were awarded for the unpumped portion of the allocation. The theory behind the Conservation Credit policy was that pumping would vary between wet and dry years; credits would be earned during wet years when pumping was reduced and the credits would then be used during the dry years when above-average pumping was required. With this scheme, pumping credits would theoretically zero-out at the end of each wet-dry cycle. However, no process was put in place to assure that large numbers of Conservation Credits were not accumulated beyond the end at each wet-dry cycle. The practical result of this policy is large numbers of Conservation Credits continue to accrue to some well owners – as many as tens of thousands of acre-feet of Conservation Credits have accrued to some organizations with multiple wells.

The current method of accumulating Conservation Credits with no expiration date has effectively left a large theoretical pumping debt on the aquifers (equivalent to several years of pumping at current extraction rates). This large debt complicates evaluation of the health of the basin because current groundwater conditions do not reflect this unused pumping debt. This is no different than judging a company's financial condition without considering monetary debt.

To bring FCGMA policy into line with the purpose for which credits were originally intended, several approaches are available. Perhaps the most important approach could be to have a limit on the annual use of these credits so that the aquifers would not be overly stressed in any single year. Another approach could be similar to that used in the adjacent Santa Paula basin, where the Stipulated Judgment from the basin adjudication allows unpumped allocations to be accumulated, but unlike in the FCGMA, any unpumped allocations for a single year expire after seven years. In this manner, accumulated debt is restricted to unpumped allocations earned within any single wet-dry cycle.

If unused credits were to expire after a period of time, the strategy would have to reflect a reasonable management strategy that takes into account the needs of pumpers, which vary by water use. For agricultural pumpers, credits are accrued for both future drought conditions and cropping changes. M&I pumpers may have accrued credits by substituting more-expensive imported water to provide a drought or emergency buffer. To ensure that any change in credit policy reflects these varying management strategies, the FCGMA should consider forming a committee (similar to the one that proposed the policy on calibration of meters) to study the issue and make recommendations on any policy changes. There are two issues that would need to be addressed – the shelf life on credits to be earned in the future and the fate of credits earned in the past.

This policy is not appropriate for Storage Credits, where water is stored for both dry periods and for emergencies such as earthquakes or levee failures in the Sacramento Delta. No change is recommended for Storage Credits.

10.1.13.2 Potential Effectiveness

The current policy for Conservation Credits allowing continuing accumulation makes it difficult to determine the current health of the basin – especially when the current pumping debt is equivalent to about three years' total pumping within the FCGMA. Modifying the FCGMA policy to expire older credits would allow a more accurate view of the health of the basin and would prevent a large pumping debt from accumulating. The effect a changed policy would have on future extractions within the FCGMA is not clear. On one hand, credit holders might be encouraged to pump credits prior to their expiration. This might effectively increase FCGMA pumping over its current levels, because some of these credits are currently being accumulated instead of being pumped. Alternatively, under the current policy of accumulating credits, many years-worth of accumulated credits could be pumped in a single dry year far exceeding any annual recharge, adversely impacting the groundwater basins through pulling in poor-quality waters and/or causing irreversible basin subsidence.

10.2 10-YEAR STRATEGIES

The following strategies that can be implemented within ten years are ranked by order of effectiveness and/or importance.

10.2.1 Additional In-Lieu Recharge to South Oxnard Plain

10.2.1.1 Description

One of the most effective management strategies in reducing overdraft is to supply water directly to overdrafted areas. This in-lieu strategy has been very effective in the Upper Aquifer System, where Santa Clara River water delivered through the Pumping Trough Pipeline has helped to alleviate the pumping trough that has been present for several decades beneath the south Oxnard Plain. Because the Lower Aquifer System now has its own pumping trough beneath the same area, extending the Pumping Trough Pipeline and/or bringing in water from other sources to the south Oxnard Plain would likely be equally as effective.

There are several options available to implement this strategy. UWCD could extend the Pumping Trough Pipeline to supply water to pumpers who are south of the current pipeline. The source of this water would likely be a combination of diverted Santa Clara River water and groundwater pumped from the Saticoy Wellfield located in the Oxnard Plain Forebay basin. UWCD has investigated such a project in the past, but costs were prohibitive. Another method of bringing water to the area would be to use Calleguas MWD's regional brine line (under construction in 2006) to bring recycled or other water from upstream areas, providing this water was of sufficient irrigation suitability. A third option would be to use water from Oxnard's GREAT project either for direct delivery to pumpers or for injection into the Lower Aquifer System. Any water delivered through an in-lieu program to this area should be eligible for credits. If there is any transfer of pumping back to the Oxnard Plain Forebay basin as part of a project using this strategy, then the considerations discussed in section 10.1.5 *Policy on Recovery of Credits from Oxnard Plain Forebay Basin* would be applicable.

10.2.1.2 Potential Effectiveness

Reducing pumping and/or injecting water into the aquifer in areas just inland of seawater intrusion can be a very effective strategy. Simulations of the Ventura Regional Groundwater Model that implement this management strategy have been shown to be effective in reducing the overdraft. For example, when 3,000 AFY of additional water are delivered or injected in the south Oxnard Plain, groundwater levels in the Lower Aquifer System rise by an average of 7 feet. The results of the groundwater modeling suggest that BMOs for groundwater levels would be met 53% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 7% of the time in the Lower Aquifer (compared to 5% with current management strategies).

10.2.2 Import Additional State Water

10.2.2.1 Description

As part of a joint integrated water management plan, UWCD and Calleguas MWD are considering expansion of State Water importation by obtaining additional amounts of Ventura County's State Water allocation on a year-by-year basis when it is not used by other Ventura County agencies. This additional water would likely be delivered to Lake Piru and released as part of UWCD's conservation release to benefit the Oxnard Plain. Currently, State Water is released from Lake Piru by UWCD as part of its conveyance of stored storm water to downstream basins. Typically, a portion of the released water percolates into basins upstream from the Freeman Diversions and the remainder of the water is diverted for recharge (direct and in-lieu). How this additional State Water is used and accounted for will likely depend upon how it is financed.

10.2.2.2 Potential Effectiveness

The effectiveness of new water importation depends upon how the water is recharged to the aquifers or delivered. If this imported water could be delivered to FCGMA pumpers in-lieu of pumping groundwater, then there would be a direct benefit to the aquifers from reduced pumping proportional to the amount of imported water. If, instead, this water was extracted by pumpers and substituted for a like amount of the imported water that would they would otherwise have delivered by Calleguas MWD, then the effects of the importation would be neutral. Thus, the ultimate fate of this additional imported water would govern the effectiveness of the strategy.

The Ventura Regional Groundwater Model was used to test the effectiveness of importing additional State Water. For the model scenario, the water was imported through Lake Piru, released with UWCD's annual conservation release down the Santa Clara River, diverted at the Freeman Diversion, and recharged in the Oxnard Plain Forebay basin. For the model simulation, it was assumed that 10,000 AFY of additional State Water were purchased in dry and average years. The results of the groundwater modeling suggest that Upper Aquifer groundwater levels in the Forebay basin would rise by an average of 6 feet. BMOs for groundwater levels would be met 54% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 7% of the time in the Lower Aquifer (compared to 5% with current management strategies).

10.2.3 Further Destruction of Abandoned or Leaking Wells

10.2.3.1 Description

With grant support, the FCGMA destroyed 49 abandoned or leaking wells that were considered by the FCGMA and UWCD to have the highest potential for cross-contamination from perched waters into the main aquifers within the FCGMA (cost and feasibility were also considered in ranking the wells for destruction). There remains a long list of additional wells that also have the potential for cross contamination of the aquifers. The FCGMA should give a priority to finding additional funds to continue this effort of well destruction.

10.2.3.2 Potential Effectiveness

Destroying abandoned or leaking wells is very effective in preventing cross contamination of aquifers within the FCGMA. In the Oxnard Plain and Pleasant Valley basins, perched waters have a much higher head (elevation) than underlying aquifers, so the conditions for cross contamination are widespread. Although there are documented cases of this cross contamination occurring, it is not known how widespread this has actually occurred.

10.2.4 Additional Monitoring Needs

10.2.4.1 Description

The current groundwater monitoring program has worked well in tracking saline intrusion beneath the Oxnard Plain. This monitoring network, along with a few other monitoring wells, were installed around 1990 by the US Geological Survey with financing provided by local agencies. Since the initial installation of the monitoring network, the continuing monitoring of these wells has been conducted by UWCD, VCWPD, and the City of San Buenaventura. As the saline intrusion on the south Oxnard Plain has moved inland, UWCD has sited and will drill two new multiple-completion monitoring wells inland of the saline intrusion. This increased monitoring program will adequately track water level and water quality trends on the south Oxnard Plain for the next several years.

In the Pleasant Valley basin, additional monitoring wells might be required if chloride levels continue to increase. The location of these potential monitoring wells would depend upon where the chloride increases occur. In the Las Posas basins, most of the existing monitoring utilizes existing production or injection wells. As part of the East Las Posas Basin Management Plan (Appendix C), new monitoring wells would provide information on the effects of the Calleguas Aquifer Storage and Recovery (ASR) project. Any such monitoring wells would likely be drilled by the Calleguas Municipal Water District. Monitoring of these wells would likely become a part of the overall Calleguas ASR monitoring program.

As more management strategies rely on increased pumping in the Oxnard Plain Forebay basin, increased monitoring will be required to ensure Forebay pumpers are not adversely affected or that pumping does not create additional groundwater problems. Increased monitoring in the Forebay has already been planned during operation of the UWCD Saticoy Wellfield. Additional monitoring should be required by the FCGMA for other projects where pumping will be shifted to the Forebay basin. An example is the GREAT project, where a substantial amount of pumping may be shifted to the Forebay; environmental documentation for the project proposes such increased monitoring. The exact monitoring required for any Forebay pumping that uses a transfer of credits should be appropriate to the location of increased pumping. At a minimum, this monitoring should include collection of monthly groundwater levels and quarterly water quality samples (to include constituents of concern such as nitrate and TDS) should include both Forebay monitoring and monitoring between the Forebay and the coast to determine potential effects in coastal groundwater levels.

10.2.4.2 Potential Effectiveness

Monitoring by itself does not solve the overdraft problem, but it is essential in determining the effectiveness of the other management strategies. In particular, monitoring provides the continuing evaluation of whether basin management objectives are being met, and often serves to increase the understanding of the dynamics of the multiple aquifer systems identified within the FCGMA.

10.3 15-YEAR STRATEGIES

The following strategies that can be implemented within 15 years are ranked by order of effectiveness and/or importance.

10.3.1 Barrier Wells in South Oxnard Plain

10.3.1.1 Description

Seawater barrier wells are used extensively in Los Angeles and Orange counties as a means of controlling seawater intrusion. A barrier project injects water along a series of wells creating a mound of recharge water as protection against seawater moving inland. Barrier wells are both expensive and complex, with costs of maintaining a barrier several times higher than for typical facilities in Ventura County such as the Freeman Diversion, spreading ponds, and distribution pipelines. In Los Angeles and Orange counties, there is a significant component of recycled water in the injected water. Thus, special health regulations govern this type of injection and are a necessary component of plans and facilities. In Ventura County, an attempt to construct a seawater barrier in the late 1970s and 1980s by the California Department of Water Resources in the Port Hueneme area was not particularly successful. Since that attempt, barrier wells were not seriously considered again because lower-cost options were identified.

We now know portions of the aquifer on the south Oxnard Plain are very difficult to recharge. In particular, the Lower Aquifer System of the south Oxnard Plain has been largely unaffected by spreading operations in the Oxnard Plain Forebay basin because this recharge is partially impeded from flowing into the areas of depressed groundwater levels by a fault or other structural barrier (see discussion in section 3.0 *Groundwater Basins and Hydrogeology – Oxnard Plain Basin*). The City of Oxnard GREAT project has evaluated barrier wells in the south Oxnard Plain as a method of delivering recycled water during winter months when agricultural irrigation demand is low. It may be prudent to consider expanding winter injection to more seasons of the year to create a full-time barrier. Additional source water for this full-time barrier would need to be identified.

A difficulty with barrier wells is that the injected water must be of very high quality to prevent clogging of the well screens. Thus, the source water for the injection would likely be a combination of highly-treated recycled water and potable water. The expense of building, maintaining, and providing water to a full-time barrier project currently makes such a project for Ventura County a lower priority. If other projects to supply in-lieu water to the south Oxnard Plain fail to prevent the increasing intrusion of saline waters or if a full-time barrier was considered as an add-on to injection wells already built through the GREAT project, then a full-time barrier project might be economically feasible.

As discussed in section 9.1 *GREAT Project (Recycled Water)*, FCGMA credits for recharge in a barrier project might be less than 1:1 because the recharged water might mix with contaminated saline groundwater. Likewise, if these credits are used for extraction from the Oxnard Plain Forebay basin, these extractions would have to follow uniform procedures addressed in section 10.1.5 *Policy on Recovery of Credits from Oxnard Plain Forebay Basin.*

10.3.1.2 Potential Effectiveness

Barrier wells could be very effective in preventing saline intrusion from moving further inland. Simulations of the Ventura Regional Groundwater Model indicate a barrier project with injection rates of 21,000 AFY into the Lower Aquifer System would raise Lower Aquifer water levels an average of 46 feet at the BMO wells, with an average groundwater elevation at the barrier of 28 ft msl. The rate of injection that was tested in the model was chosen to match the winter injection rate of the GREAT project at full planned implementation.

The groundwater modeling suggests that BMOs for groundwater levels would be met 63% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 48% of the time in the Lower Aquifer (compared to 5% with current management strategies. The barrier project is the most effective strategy modeled in meeting BMOs (Table 8). However, the barrier would not prevent saline intrusion in areas inland of the barrier within the LAS groundwater depression in the Pleasant Valley basin; the only prevention for saline intrusion within the groundwater depression would be to raise groundwater levels within the depression.

10.3.2 Injection of Treated River Water into Overdrafted Basins

10.3.2.1 Description

A management strategy that is commonly suggested is taking diversions from the Santa Clara River when there is abundant river flow and injecting it into the aquifers that have depressed water levels. However, raw river water could not be injected without treatment that would bring the water to at least drinking water quality to prevent well clogging and potential health concerns; the cost of this treatment was generally considered to be prohibitive when compared

to other management strategies. This assumption may no longer be correct, as treatment costs become more affordable when compared to alternatives.

Much of the infrastructure to convey water from the Freeman Diversion to Pleasant Valley and the south Oxnard Plain already exists. The costs of the injection would be building a treatment facility, installing injection wells, and operating the treatment plant.

This injection would logically operate during periods when there is more water in the Santa Clara River than recharge facilities can accommodate. These conditions occur following rainstorms during many average precipitation years and can occur for extended periods (several months) during heavy precipitation years. The additional diversions could be conveyed to Pleasant Valley and the South Oxnard Plain via the existing Pleasant Valley and PTP pipelines. The raw water would then be treated and injected. Unlike aquifer storage and recovery (ASR) projects, the water would be placed in the aquifer for recharge purposes and would not be extracted at a later time as part of the project.

10.3.2.2 Potential Effectiveness

Besides reducing groundwater pumping in areas of lowered groundwater levels, providing direct recharge to affected aquifers is the most effective method of reducing pumping stresses and overdraft.

Injection of treated river water could be very effective in raising groundwater levels in the pumping depression in the south Oxnard Plain and Pleasant Valley basins. Simulations of the Ventura Regional Groundwater Model indicate an injection project with rates into the Lower Aquifer System of 1,500 AFY during dry years to 5,000 AFY during wet years would raise Lower Aquifer water levels an average of as much as 13 feet at the BMO wells in the area of injection.

The groundwater modeling suggests that BMOs for groundwater levels would be met 53% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 11% of the time in the Lower Aquifer (compared to 5% with current management strategies.

10.3.3 Increase Diversions from Santa Clara River

10.3.3.1 Description

The Freeman Diversion was designed to divert more river water than current diversions. However, the current water right for the Freeman Diversion permitted by the State Water Resources Control Board is only 375 cfs (cubic feet per second) because other conveyance facilities downstream of the Freeman Diversion were not designed for the higher flow rate. If these conveyance facilities were modified and additional spreading facilities were constructed to physically handle the additional volume of water, a right to a higher diversion rate could be beneficial during periods of high flow in the river. Any higher diversion procedure would have to be designed so that there was sufficient water available for environmental uses. In order to increase diversions at the Freeman Diversion, a modified water right would have to be obtained from the State Water Resources Control Board and appropriate State and Federal agencies would have to be consulted. UWCD is studying options for such an expansion.

10.3.3.2 Potential Effectiveness

The Santa Clara River remains the primary recharge source for the Oxnard Plain basin and supplies significant recharge to the Pleasant Valley basin. It is clear that increased recharge since the Freeman Diversion was constructed has had a major positive impact in reducing seawater intrusion in the Upper Aquifer System. Likewise, many other strategies of this

Management Plan rely on substituting pumping in areas of poor recharge to pumping in the Oxnard Plain Forebay basin, which is easily recharged by water diverted from the Santa Clara River. Additional diversions and recharge to the Forebay basin, therefore, are necessary to make other management strategies possible.

UWCD's River Routing Model was used to predict the amount of additional diversions that were possible from peak winter storm flows at the Freeman Diversion, within the current 1,000 cfs flow capacity limitation of key portions of the conveyance system. The model, which uses daily flow data, predicted that additional potential diversions ranged from an average of 3,000 AFY during dry years to an average of 43,000 AFY in wet years. This additional water was largely recharged in hypothetical recharge facilities in the RiverPark and Ferro mining pits.

The Ventura Regional Groundwater Model simulations suggest that the additional diversions have several beneficial effects. The additional recharge from the diversions raise groundwater levels in the Upper Aquifer of the Oxnard Plain Forebay basin by more than 10 ft, allowing the Forebay to fully fill during wet years and lessening the impact of the dry-year pumping envisioned in other strategies in this Plan. At Upper and Lower Aquifer wells with BMOs, average groundwater levels would increase by about 3 ft. BMOs for groundwater levels would be met 54% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 8% of the time in the Lower Aquifer (compared to 5% with current management strategies.

10.3.4 Shift Pumping to Northwest Oxnard Plain

10.3.4.1 Description

The northwest Oxnard Plain, in the area south of the Santa Clara River, has historically had groundwater elevations that have rarely gone below sea level. There are also no submarine canyons offshore of the northwest Oxnard Plain, eliminating a short-circuit route for seawater intrusion to reach coastal aquifers. Groundwater gradients in the Upper Aquifer System indicate that some of the water recharged to the UAS in the Forebay likely flows offshore in the coastal northwest Oxnard Plain basin. Thus, this portion of the aquifer might sustain some increased pumping without negative consequences. The amount of pumping that could be shifted to this area would depend upon the configuration of the pumping wells and the volume of pumping.

10.3.4.2 Potential Effectiveness

If pumping is shifted from areas that are difficult to recharge, such as the LAS in the southern portion of the Oxnard Plain basin and in the Pleasant Valley basin, to areas that are more-easily recharged, the effect is beneficial to the aquifers. Simulations of the Ventura Regional Groundwater Model indicate that with a shift of pumping of 2,000 AFY from near the edge of the Oxnard Plain Forebay basin to the northwest Oxnard Plain basin, groundwater levels improve less than a foot at wells with BMOs, but drop less than a foot in the northwest Oxnard Plain. Because the current groundwater levels in the Upper Aquifer of the northwest Oxnard Plain are more than 6 ft above their BMO, a more substantial shift in pumping could be accommodated, with a like amount of improvement in other areas of the coastal basins.

10.4 GREATER THAN 15-YEAR STRATEGIES

The following strategies that would be implemented later than 15 years are ranked by order of effectiveness and/or importance.

10.4.1 Additional Reductions in Pumping Allocations

10.4.1.1 Description

After other feasible strategies for reducing the overdraft within the FCGMA are considered, pumping reductions beyond the 25% may have to be examined. As discussed below, any further pumping reductions may not be necessary if most of the strategies discussed in this Plan are implemented. These strategies are likely to be expensive, however, so the FCGMA should retain as a further strategy additional pumping reductions if the means are not found to implement the strategies. Any additional required reductions should be effected using the current system of allocations and efficiencies. If this step is necessary, it would be prudent to revisit whether agricultural efficiency should be tightened up or continue to be used, or whether all pumpers should use the allocation/credit method of reporting. If significant portions of the strategies recommended in this Plan are not implemented, consideration should be given to applying further pumping reductions only in areas where groundwater levels are particularly depressed. For instance, as part of the evaluation of basin yield (section 7.0 *Yield of the Groundwater Basins*), a further reduction of 85% in pumping in the south Oxnard Plain and Pleasant Valley basins allowed groundwater elevations to meet Basin Management Objectives.

10.4.1.2 Potential Effectiveness

The necessity of any further pumping reductions was evaluated using the Ventura Regional Groundwater Model. This modeling suggested that with all strategies implemented, BMOs for groundwater levels would be met 67% of the time in the Upper Aquifer (compared to 51% with current management strategies) and 76% of the time in the Lower Aquifer (compared to 5% with current management strategies. Section 7.0 *Yield of the Groundwater Basins* discusses the issue of how often BMOs should be met to be protective of the basins in the FCGMA. The above numbers suggest that implementation of all the management strategies would vastly improve the health of the basins. Actual future observations of basin conditions, particularly the fate of sweater intrusion, will determine whether these strategies truly protect the basins. The modeling does suggest that further reductions in FCGMA extractions would not be warranted until the effect of the other management strategies can be observed or unless may of the strategies are not implemented because of financial or other reasons. However, implementation of a significant number of the strategies recommended in this Plan would be necessary to avoid further pumping reductions.

11.0 ACTION PLAN TO ATTAIN BASIN MANAGEMENT OBJECTIVES

11.1 PLANNING/IMPLEMENTATION ACTIONS

11.1.1 Strategic Planning

Many of the management strategies in this plan involve considerable cooperation among agencies within the FCGMA and come at considerable cost. The FCGMA is the common element among these agencies and is the appropriate forum in which to discuss the management strategies. Although many of the actual projects that would implement the management strategies would be built and managed by individual agencies within the FCGMA, the cost of the projects is likely to be spread to a wider group. Projects that have the most advantageous cost/benefit ratios would likely be supported by this wider group.

The FCGMA should initiate the discussion of how all the strategies fit together with current and future project of individual agencies. The topics to be covered could include:

1) Cost/benefit analyses of management strategies;

2) Cooperative efforts needed;

3) Methods to finance the projects;

4) Actions to implement the projects.

Parts of the analyses needed for the discussion have already been generated through agency's master planning efforts either within agencies or as larger cooperative efforts, and these plans cold be used as the starting point in these discussions.

11.1.2 Implementation

As a follow-up to the strategic planning effort, the FCGMA should take the results of the strategic planning and facilitate their implementation. The main focus of this effort would be to assist in cooperative efforts to implement the FCGMA management strategies.

11.2 RECOMMENDED CHANGES TO EXISTING FCGMA POLICIES

11.2.1 Continuation of 25% Pumping Reduction

Groundwater modeling of extending the phased FCGMA pumping reductions to their conclusion at 25% reductions indicated that this policy results in modest improvements at BMO indicator wells. Despite these modest improvements, it is necessary to continue this policy because the modeling also indicated that it will take the combination of all of the strategies recommended in this Plan to reach BMO goals – although individual strategies may not make large contributions, the sum of these strategies is the key to solving the overdraft problem. It is recommended that the FCGMA Board implement the delayed reduction to 20% before the end of 2007 and implement the reduction to 25% on the 2010 scheduled date.

11.2.2 Credits to be Transferred to Forebay Basin

Current water conservation facilities and FCGMA policies encourage reduced pumping in areas of seawater intrusion or overdrafted areas by moving those pumping stresses to areas that are more readily recharged. Examples of these projects are the Oxnard-Hueneme Pipeline system, the Pumping Trough Pipeline, and the Pleasant Valley Pipeline. A more recent transfer is for credits accrued by the Conejo Creek project to be used for extractions from the Oxnard Plain Forebay basin as part of the Supplemental M&I Water Program. The program has criteria to prevent adverse impacts from this increased pumping in the Forebay, including a restriction on pumping when groundwater elevations in key wells in the Forebay are below pre-determined levels.

The FCGMA should establish a policy for future credit transfers to the Forebay. This policy should include both criteria to ensure that projects do not harm the Forebay and to prioritize future projects if there is more demand for these transfers than the Forebay can accommodate. The Conejo Creek-Supplemental M&I Water projects serve as a good model for future projects that would provide in-lieu recharge or injection through wells in overdrafted areas and then recover that water from the Forebay or other areas that are readily recharged. Any such pumping using FCGMA credits should be able to demonstrate that a plan for increased pumping would not adversely impact the basin pumped. The FCGMA should encourage these types of projects, as long as there is a net benefit to the aquifers and the pumping does not adversely

affect that basin. Specific criteria that the FCGMA could use for future projects are discussed in section 10.1.5 *Policy on Recovery of Credits from Oxnard Plain Forebay Basin*.

11.2.3 Shift Some Pumping from Lower Aquifer System to Upper Aquifer System

A shift in pumping back to the UAS has already been initiated through County well permitting requirements. However, this shift should not be uniformly enforced across the basins within the FCGMA. A detailed plan must be formulated that takes into account local recharge sources, hydrologic connection between portions of the basin, and current/future in-lieu recharge projects. This should be accomplished through use of the Ventura Regional Groundwater Model in fine-tuning the details of this plan, with the FCGMA, VCWPD, and UWCD working together.

11.2.4 Irrigation Efficiency Calculation

As discussed in section 10.1.9 *Irrigation Efficiency Calculations*, the irrigation efficiency calculation should be revisited to ensure that the methodology gives appropriate results. The FCGMA Board should convene a committee of experts and stakeholders to examine the efficiency methodology. This committee would incorporate current methods of determining crop demand, including recommending updated weather station technology if necessary. The purpose of this exercise is to ensure that the efficiency calculations submitted to the FCGMA by agricultural irrigators are accurate. Any changes to the methodology should focus on improving actual irrigation efficiency by pumpers and ensuring pumpers reporting actual groundwater use against their allocation are on the same "level field" as those using irrigation efficiency.

The committee would also review whether 80% irrigation efficiency is appropriate to current farm management methods or whether this efficiency percentage should be changed. The committee should be convened within six months of adoption of this Management Plan. Recommendations of the committee would be presented to the FCGMA for possible modification of current ordinances.

11.2.5 Additional Monitoring

Additional monitoring may be required by the FCGMA when certain management strategies are implemented. For instance, projects that rely upon new pumping from the Forebay basin, as a result of water delivery to areas that are not as readily recharged such as the south Oxnard Plain, may require additional monitoring to ensure that other Forebay pumpers are not adversely impacted. It is recommended that this additional monitoring be a condition of approval for applying pumping credits to the Forebay when they are earned elsewhere within the FCGMA.

Additional monitoring is also required as part of the East Las Posas Basin Management Plan (Attachment C). This additional monitoring is incorporated in the FCGMA Management Plan by reference.

In addition, monitoring should also be required for projects in the future that pump poor-quality water without an allocation along Calleguas Creek. This monitoring would focus on detecting both improvements in water quality in the pumped area and un-anticipated changes in water levels or water quality in adjacent portions of the FCGMA aquifers.

11.2.6 Use Penalties to Purchase Replacement Water

The FCGMA charges a penalty to pumpers for extracting more water than is allowed under the various allocations (Historical, Baseline, Irrigation Efficiency). The increased groundwater use caused by the over-pumping could be offset by using the fees generated by penalties to purchase replacement water for the extracted groundwater. The FCGMA has several options to obtain additional water, including purchasing unused portions of Ventura County's State Water Allocation, paying M&I users to increase their imported/groundwater blend, and purchase of water through a variety of programs from the State or others such as turn-back pool water, Dry-Year Purchase Program, and other programs. This water could be delivered through either conveyance down the Santa Clara River or Calleguas MWD's pipeline, depending upon how the water was purchased and used.

11.3 RECOMMENDED ADDITIONS TO FCGMA POLICIES

11.3.1 5-Year Update of FCGMA Management Plan

It is recommended that this Plan be updated every five years. This update should include a status of how the BMOs are being met, effectiveness of strategies that have been implemented, status of other recommended strategies, and recommendations for any additional management strategies.

11.3.2 Separate Management Plans for Some Basins

All of the basins within the FCGMA are managed under an umbrella of this Management Plan. However, there are circumstances in some of the basins that require additional management policies, such as in the East Las Posas basin. It is recommended that the FCGMA Board adopt the East Las Posas Management Plan (Appendix C) by resolution. In addition, the policies on pumping and treating poorer quality groundwater without an allocation should be incorporated into FCGMA policy by adopting this overall FCGMA Management Plan.

It is recommended that no changes be made to current FCGMA pumping reductions that treat all the FCGMA basins the same. It would be appropriate to revisit this policy in the future if basin management objectives have been achieved in a particular basin; the FCGMA Board might consider whether it is appropriate to continue with additional pumping reductions.

11.3.3 Adoption of Basin Management Objectives

The basin management objectives recommended in this Management Plan should be adopted by resolution by the FCGMA Board. As additional information becomes known about individual groundwater basins, it may be appropriate to modify the recommended objectives and/or to add additional objectives.

11.3.4 Extractions of Poor-Quality Water Without an Allocation

There are additional areas along Calleguas Creek besides the South Las Posas basin where groundwater has elevated salinity. Base flow from the Arroyo Las Posas has migrated completely across the South and East Las Posas basins and into the northernmost Pleasant Valley basin, providing a source of new recharge to this portion of the Pleasant Valley basin. However, this new recharge water has created water quality problems for groundwater pumpers. City of Camarillo wells in this area have experienced increased salts as groundwater

levels have risen over the last decade, similar to what has already happened in the South and East Las Posas basins.

Extraction of this groundwater is an appropriate groundwater management strategy providing that either: 1) extracting the groundwater improves the overall water quality in the basin without also causing overpumping of the basin or 2) extracting the groundwater provides a new water supply outside of those currently allocated by the FCGMA. If these conditions are not met, then the extractions should be debited against an existing allocation. In the South Las Posas basin, for example, pumping and treating the shallow groundwater would both improve the water quality and not reduce supplies to the basin (better quality stormwater that now bypasses the basin would then have the ability to infiltrate and replace the pumped water). Alternatively, if shallow groundwater along Calleguas Creek was not hydraulically connected to the main portion of the basin, and pumping that groundwater would have no effect on groundwater in the main basin, then pumping this groundwater could provide a new supply of water. This lack of hydrologic connection would have to be demonstrated using standard geologic techniques. These techniques would include analysis of groundwater levels, water quality parameters, well logs, age-dating, geochemical analyses, or other techniques.

11.3.5 Barrier Wells

As discussed in section 10.3.1 *Barrier Wells in South Oxnard Plain*, construction of injection barrier wells near the coastline to prevent landward migration of saline intrusion is one management strategy. Under current FCGMA policy, any project in the future that has barrier wells as a project component would need FCGMA approval to earn extraction credits that could be used to pump a like amount of groundwater elsewhere within the FCGMA. As discussed in section 10.1.5 *Policy on Recovery of Credits from Oxnard Plain Forebay Basin*, there may be issues related to the pump-back. It is recommended that any such FCGMA approval be contingent upon analysis of the potential effectiveness of the barrier in the improving water quality, analysis showing that pumping credits earned by injection that are used elsewhere does not adversely affect the pumped area, and a monitoring program to measure the effects of both the barrier wells and the extraction wells.

11.3.6 Protecting Recharge Supplies

Because of the importance of preserving current recharge sources for the aquifers and potentially adding additional recharge, the FCGMA adopts a policy that protects these recharge sources. Although the FCGMA cannot determine water rights, it will use its influence with other agencies to ensure protection of the recharge sources. FCGMA actions might include writing letters of support, discussing the issues with other agencies, and testifying at hearings related to these recharge sources.

11.3.7 Nitrate Sources in Oxnard Plain Forebay Basin

It is recommended that the FCGMA develop a policy to limit high-nitrate crops in reclaimed gravel basins where there is little or no vadose zone for degradation of the nitrate before it reaches groundwater. The particulars of this issue are discussed in section 10.1.4 *Limitation on Nitrate Sources in Portions of the Oxnard Plain Forebay Basin*.

11.3.8 Additional Conservation Measures

It is recommended that the FCGMA Board adopt a policy encouraging all planning agencies within the FCGMA to require dual plumbing in new developments where treated wastewater is

feasible for use. As part of this policy, the FCGMA should work with planners to incorporate these policies into general plans and other appropriate planning documents.

11.3.9 Verification Procedure for Extraction Reporting

It is recommended that the FCGMA establish a verification procedure to ensure that self-reporting of extractions by pumpers to the FCGMA is accurate. This procedure could be as simple as an annual random inspection of a few meters to ensure that the meter is installed and that the readings that are reported to the FCGMA agree with the meter readings.

11.3.10 Consideration of Further Pumping Reductions

If most of the effective strategies recommended in this Plan are not implemented because of cost, lack of cooperation, lack of will, or some other factor, the FCGMA should consider further pumping reductions. The actual reductions required would depend upon how the basins have responded to the strategies that have been implemented, and the required reductions could be determined using the groundwater model at that time.

12.0 SUMMARY OF FCGMA MANAGEMENT STRATEGIES

FCGMA management strategies are separated into three categories – current, in development, and future. Each strategy has a short description. For a full discussion of each strategy, refer to the earlier three sections on management strategies. Some of these strategies related directly to FCGMA ordinances and other actions. Many of these strategies are carried out by agencies other than the FCGMA, but FCGMA policies either encourage these projects or make them possible through the credit program.

12.1 CURRENT STRATEGIES

Includes those within the original 1985 FCGMA Management Plan and those that have been developed since that time:

- Limitation of Groundwater Extractions – 25% phased reduction in pumping, including 80% agricultural efficiency.
- Encourage Both Wastewater Reclamation and Water Conservation – Encouraged use of recycled water and water conservation techniques.
- Operation of the Oxnard Plain Seawater Intrusion Control Project (UWCD's Pumping Trough Pipeline, Lower Aquifer System Wells, Freeman Diversion) – Encourage UWCD projects.
- Annual Groundwater Monitoring Program – Conducted by VCWPD and UWCD.
- East and West Las Posas Basin Pumping Restrictions – Restricted water use outside La Posas basin and FCGMA boundary.
- Monitor FCGMA Groundwater Extractions – Program of reporting extractions to FCGMA.
- Implementation of Drilling and Pumping Restrictions – Various policies for aquifers used for water production and for well completions.

- Metering of Groundwater Extractions – Required meters on all except domestic wells.
- Fox Canyon Outcrop Expansion Area – Grandfathered some historic areas where groundwater pumped from within the FCGMA is delivered outside of Agency boundaries.
- Noble Spreading Basins – Encouraged expanding UWCD historical artificial recharge areas.
- Las Posas Basin ASR Project – Set criteria for Aquifer Storage and Recovery project in Las Posas basin.
- Conejo Creek Diversion Project – Allowed credits for diversion and delivery of water to pumpers in-lieu of their pumping groundwater.
- Supplemental M&I Water Program – Allowed credits earned in Pleasant Valley basin to be pumped from Oxnard Plain Forebay basin which is more easily recharged.
- Saticoy Wellfield – Groundwater pumped by UWCD from Oxnard Plain Forebay basin is delivered to pumpers in Oxnard Plain and Pleasant Valley basins in lieu of pumping local groundwater.
- Importation of State Water – Credits earned by UWCD for importing State Water for recharge are put in a special account to help solve management problems in the future.
- Calibration of Groundwater Extraction Meters – Meters on wells will now be re-calibrated every three years.

12.2 STRATEGIES UNDER DEVELOPMENT

Includes strategies in which planning and design of projects is currently taking place:

- RiverPark Recharge Pits – Encourage additional recharge facilities in Forebay.
- GREAT Project (Recycled Water) – Credits earned from in-lieu deliveries and injection of recycled can be pumped from Forebay.
- South Las Posas Basin Pump/Treat – Poor quality water can be pumped and treated without using credits.
- Development of Brackish Groundwater, Pleasant Valley Basin – Poor quality water may be able to be pumped and treated without using credits.
- Non-Export of FCGMA Water – Enforce current restrictions on water export; determine procedure for periodic evaluation of whether there are new water exports.

12.3 FUTURE STRATEGIES – 5 YEARS

Includes strategies that could be implemented within the first 5 years (ranked in order of effectiveness):

- 5-Year Update of FCGMA Management Plan – Regular updating of plan, report on BMOs and progress

- Plan to Shift Some Pumping Back to Upper Aquifer System – Shift some new wells back to UAS, with area and number to be determined jointly with UWCD using Ventura Regional Groundwater Model.
- Protect Current Sources of Recharge – Use FCGMA influence with regulatory agencies to ensure that sources of recharge such as the Santa Clara River are not degraded or unduly dedicated to non-recharge uses.
- Limitation on Nitrate Sources in Portions of the Oxnard Plain Forebay Basin – Limit high-nitrate crops in reclaimed gravel basins in Forebay where a vadose zone is either very thin or missing.
- Policy on Recovery of Credits from Oxnard Plain Forebay Basin – Adopt a recommended policy for transfer of credits for pumping in the Oxnard Plain Forebay basin.
- Verification of Extraction Reporting – Annually check a few random wells for meter use and accurate reporting of meter readings.
- Separate Management Strategies for Some Basins – Adopt East Las Posas Basin Management Plan.
- FCGMA Boundary – Adjust FCGMA boundary to conform to Oak Ridge fault and boundary with Santa Paula Basin Adjudication.
- Irrigation Efficiency Calculations – Consider modifying calculations for Irrigation Efficiency Allocation.
- Additional Storage Projects in Overdrafted Basins – Consider storage projects in Pleasant Valley and perhaps southern Oxnard Plain basins, ensuring that the storage does not interfere with current groundwater uses or recharge to the basin.
- Penalties Used to Purchase Replacement Water – Use penalties for pumping beyond allocation to purchase water for recharge to the aquifers.
- Additional Water Conservation – Encourage agencies and cities to require dual plumbing in new developments, where possible, to replace groundwater use with recycled water.
- Shelf Life for Conservation Credits – Allow Conservation Credits to expire after a wet-dry cycle to bring credit policy in line with goals of this program.

12.4 FUTURE STRATEGIES – 10 YEARS

Includes strategies that could be implemented within 5 to 10 years (ranked in order of effectiveness):

- Additional In-Lieu Recharge to South Oxnard Plain – Deliver additional water to southern Oxnard Plain to offset pumping.
- Import Additional State Water – Import and recharge more of Ventura County's State Water Allocation.

- Further Destruction of Abandoned or Leaking Wells – Seek grant funding to reinstate program of destroying abandoned or leaking wells that pose a risk of cross contamination of FCGMA aquifers.
- Additional Monitoring Needs – Support UWCD and VCWPD in determining additional monitoring needs as contamination threats evolve.

12.5 FUTURE STRATEGIES – 10 TO 15 YEARS

Includes strategies that could be implemented within 10 to 15 years (ranked in order of effectiveness):

- Barrier Wells in South Oxnard Plain – Develop a policy for credits for water injected in barrier wells.
- Injection of Treated River Water into Overdrafted Basins – Treat diverted river water to drinking water quality and recharge it through injection in Oxnard Plain and Pleasant Valley basin.
- Increase Diversions from Santa Clara River– Increase diversions of high-volume storm flows for recharge.
- Shift Pumping to Northwest Oxnard Plain – Shift some pumping to the more easily recharged northwestern Oxnard Plain.

12.6 FUTURE STRATEGIES – GREATER THAN 15 YEARS

Includes strategies that could be implemented more than 15 years from now (ranked in order of effectiveness):

- Additional Reductions in Pumping Allocations – As a last resort if the other strategies fail to meet Basin Management Objectives, consider reducing allocations beyond the required 25% reduction. Also consider focusing these reductions in the south Oxnard Plain and Pleasant Valley basins where groundwater levels are particularly depressed.

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A 1.0 APPENDIX A - PROGRESSION OF SEAWATER INTRUSION BENEATH THE SOUTH OXNARD PLAIN

Although seawater intrusion under the Oxnard Plain has been studied over several decades, the details of the intrusion have not been analyzed until recently when United Water Conservation District (UWCD) entered all historic data on water levels, water quality, and well construction into digital databases and GIS coverages so the entire data set could be analyzed systematically. This new analysis uses all this digital information to construct a series of maps depicting groundwater levels and chloride concentrations in wells within the south Oxnard Plain from as far back as 1920. The analysis used 5-year time slices in both the Lower Aquifer System and Upper Aquifer System to determine when groundwater levels first dropped below sea level, when chloride levels first increased as a result of the landward gradient caused by these lowered groundwater levels, and the progression of saline water since that time.

Saline intrusion is recognized in monitoring wells by concentrations of chloride and Total Dissolved Solids (TDS) that are several times higher than the Basin Plan Objectives of 150 mg/L and 1,200 mg/L, respectively. In practice, the leading edge of the intrusion is mapped on the Oxnard Plain as the first occurrence of chloride in excess of 500 mg/L., which is used in the following set of maps.

Groundwater levels first dropped below sea level in the period 1945-49 in the Upper Aquifer System (Figure 34), although groundwater levels were scarce at the coastline for some years prior to that time. In the following 5-year time slice of 1950-54 (Figure 35), groundwater levels dropped below sea level across much of the south Oxnard Plain, and chlorides increased to as much as 1,925 mg/L at the Port Hueneme coastline. Thus, the apparent time lag between groundwater dropping below sea level and the encroachment of seawater was somewhere in the range of 5 to 10 years. In the following 5-year time slice of 1955-59, chlorides increased rapidly in coastal wells, reaching as high as 27,350 mg/L (Figure 36).

Although a few sampled wells may have had corroded casings that allowed poorer-quality perched water to flow into the well, most of the early chloride readings were taken from pumping wells with a smaller chance of significant cross-contamination during sampling (groundwater flowing into pumping wells would likely come mostly from screened intervals in the well). Outliers of wells with poorer quality water were not considered in the interpretation of the areas of saline intrusion to minimize random instances of cross-contamination; it was only concentrations of wells with poor quality water that were considered as significant. Within the first 20 years of intrusion, higher chloride levels were evident up to 3 miles inland from the area of initial intrusion, an intrusion rate of about 800 feet per year. This rate of intrusion is similar to rates calculated for seawater intrusion in the Salinas groundwater basin (e.g., CDWR, 1973).

The intrusion of the Upper Aquifer System in the Port Hueneme area was temporarily arrested during the mid 1980s following a wet climatic cycle (e.g., Figure 42). As the new FCGMA policies, the Freeman Diversion, and the PTP Pipeline came online, chloride levels in the Port Hueneme saline lobe in the Upper Aquifer System continued to decrease, with chloride concentrations in some wells near the coastline returning to drinking-water quality. However, chloride levels remain high in smaller lobes centered around both Port Hueneme Harbor and Mugu Lagoon (Figure 44). Unfortunately, some of the saline water intruded around Port Hueneme did not exit via the canyon when high water levels return. Unquantified amounts of saline water were transported to the southeast along the coast by the prevailing (non-drought period) groundwater gradient.

Intrusion in the Lower Aquifer System lagged considerably in time behind the Upper Aquifer System. Groundwater levels near the coastline first went below sea level in the 1955-59 time period (Figure 48), but high chlorides were not detected until the 1985-89 time period at Port Hueneme and the 1990-94 time period near Point Mugu (Figure 52, Figure 53), some 30 years later. This time lag is partially caused by the longer travel time for seawater intruded from the Lower Aquifer System outcrops along the offshore Hueneme Submarine Canyon walls and partially the result of the lack of monitoring points right at the coastline until the USGS monitoring wells were drilled in the late 1980s and early 1990s. As discussed in section 5.0 *Water Quality Issues*, the U.S. Geological Survey interpretation is that the majority of the saline intrusion in the Lower Aquifer System near Point Mugu is saline water being pulled from surrounding sediments rather than from the ocean itself (see Figure 56).

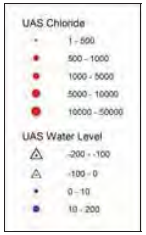

Figure 29. Legend for Figure 30 to Figure 44 for Upper Aquifer System time slices. Chloride concentrations are in mg/L, water level is elevation above or below mean sea level. All maps are oriented with north to the top of the page. Area of map coincides with location map in Figure 2 in section 2.0 *Background of Groundwater Management and Overdraft Within the FCGMA.*

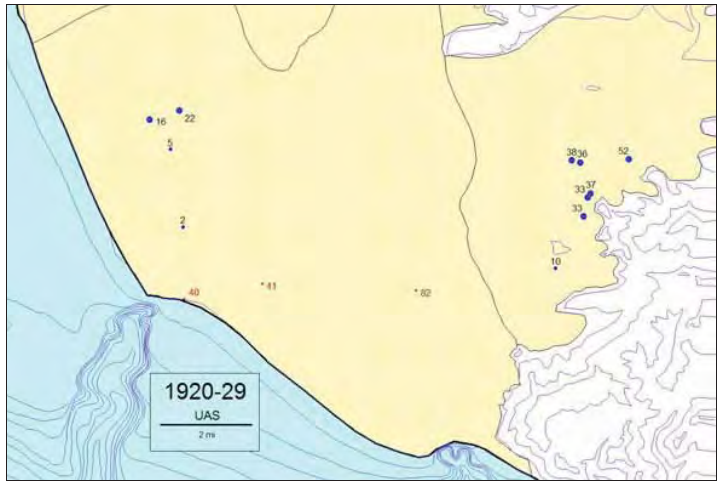

Figure 30. Upper Aquifer System groundwater levels and chloride levels, 1920 to 1929. Legend is shown in Figure 29. Line in title block is two miles in length.

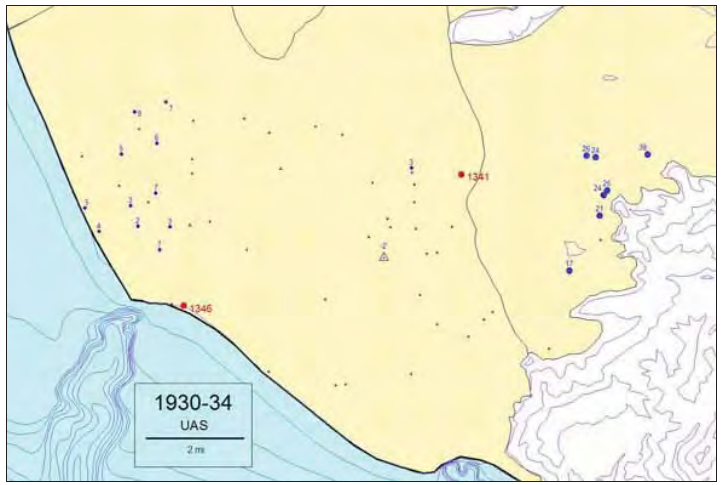

Figure 31. Upper Aquifer System groundwater levels and chloride levels, 1930 to 1934. Legend is shown in Figure 29. Line in title block is two miles in length.

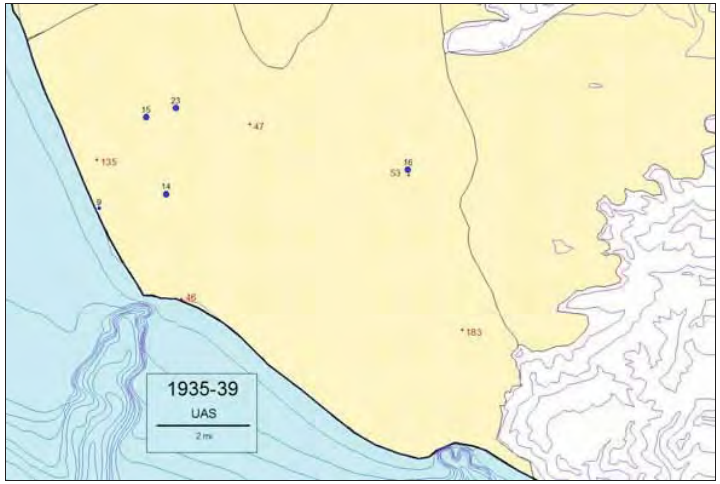

Figure 32. Upper Aquifer System groundwater levels and chloride levels, 1935 to 1939. Legend is shown in Figure 29. Line in title block is two miles in length.

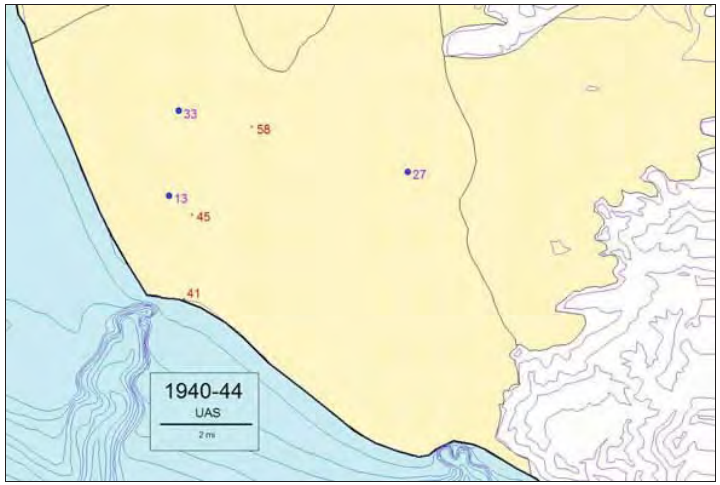

Figure 33. Upper Aquifer System groundwater levels and chloride levels, 1940 to 1944. Legend is shown in Figure 29. Line in title block is two miles in length.

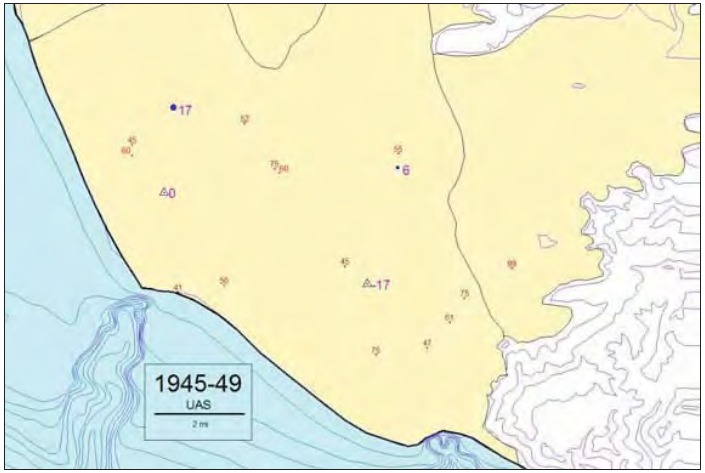

Figure 34. Upper Aquifer System groundwater levels and chloride levels, 1945 to 1949. Legend is shown in Figure 29. Line in title block is two miles in length.

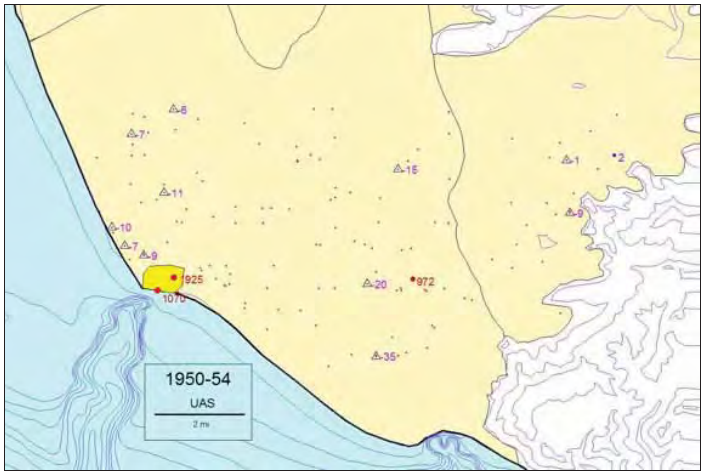

Figure 35. Upper Aquifer System groundwater levels and chloride levels, 1950 to 1954. Legend is shown in Figure 29. Bright yellow area is intruded by seawater near Hueneme Submarine Canyon. Line in title block is two miles in length.

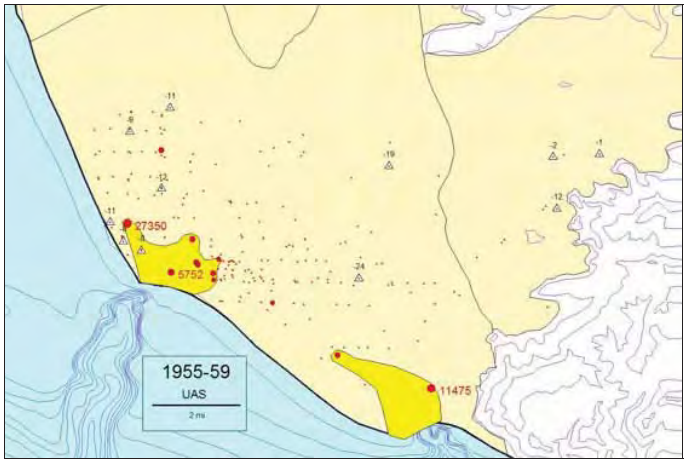

Figure 36. Upper Aquifer System groundwater levels and chloride levels, 1955 to 1959. Legend is shown in Figure 29. Bright yellow areas are intruded by saline waters. Line in title block is two miles in length.

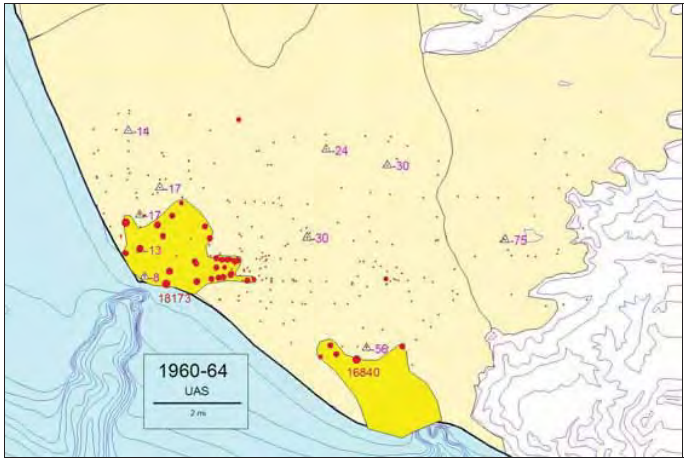

Figure 37. Upper Aquifer System groundwater levels and chloride levels, 1960 to 1964. Legend is shown in Figure 29. Bright yellow areas are intruded by saline waters. Line in title block is two miles in length.

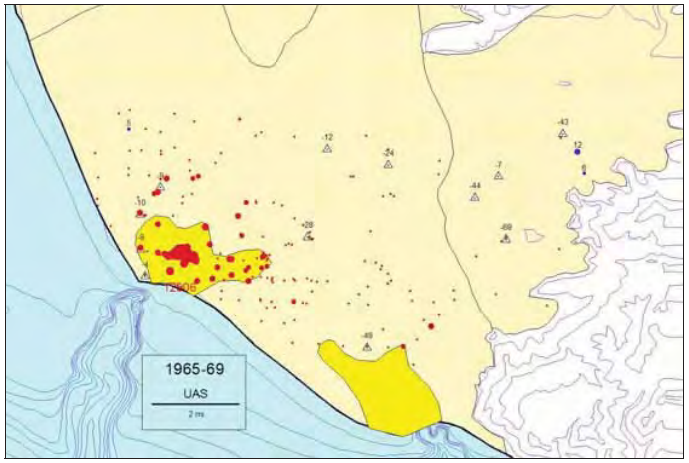

Figure 38. Upper Aquifer System groundwater levels and chloride levels, 1965 to 1969. Legend is shown in Figure 29. Bright yellow areas are intruded by saline waters. Line in title block is two miles in length.

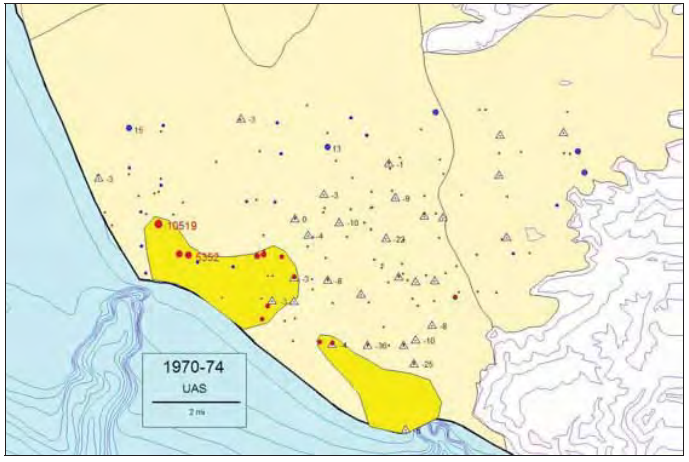

Figure 39. Upper Aquifer System groundwater levels and chloride levels, 1970 to 1974. Legend is shown in Figure 29. Bright yellow areas are intruded by saline waters. Line in title block is two miles in length.

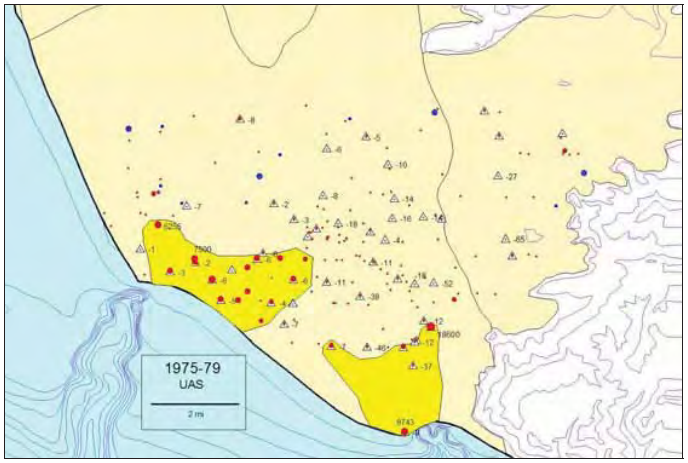

Figure 40. Upper Aquifer System groundwater levels and chloride levels, 1975 to 1979. Legend is shown in Figure 29. Bright yellow areas are intruded by saline waters. Line in title block is two miles in length.

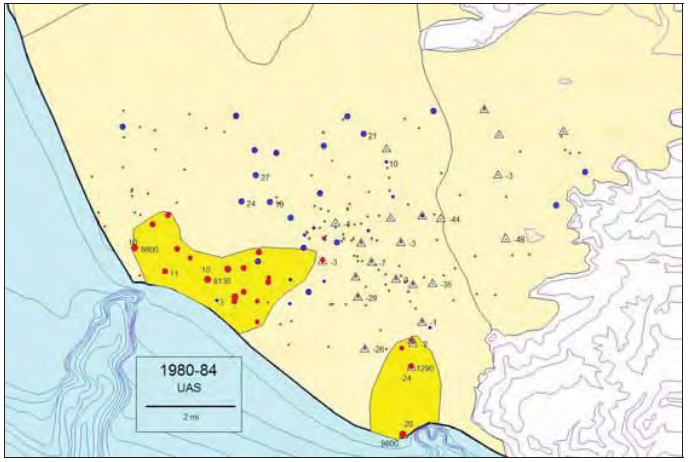

Figure 41. Upper Aquifer System groundwater levels and chloride levels, 1980 to 1984. Legend is shown in Figure 29. Bright yellow areas are intruded by saline waters. Line in title block is two miles in length.

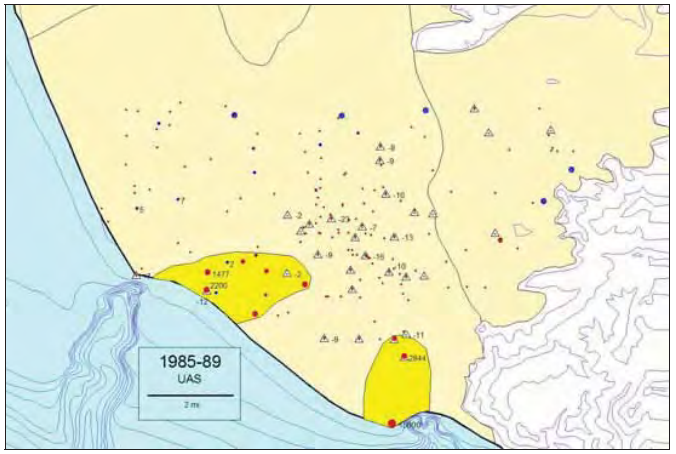

Figure 42. Upper Aquifer System groundwater levels and chloride levels, 1985 to 1989. Legend is shown in Figure 29. Bright yellow areas are intruded by saline waters. Line in title block is two miles in length.

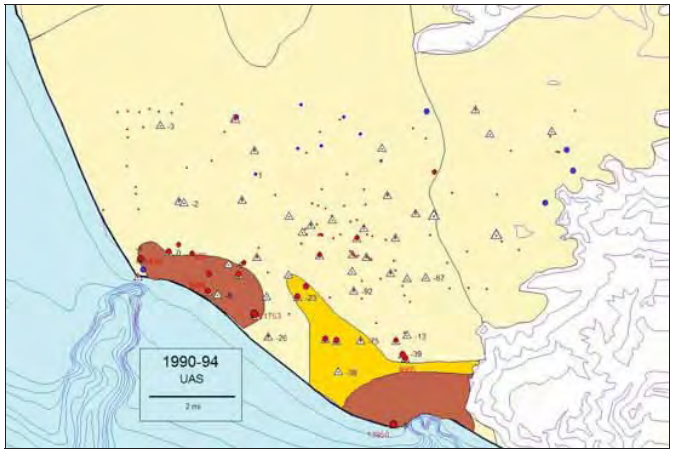

Figure 43. Upper Aquifer System groundwater levels and chloride levels, 1990 to 1994. Legend is shown in Figure 29. Source of saline intruded areas: reddish brown is from seawater; yellow-orange is from sediments. Line in title block is two miles in length.

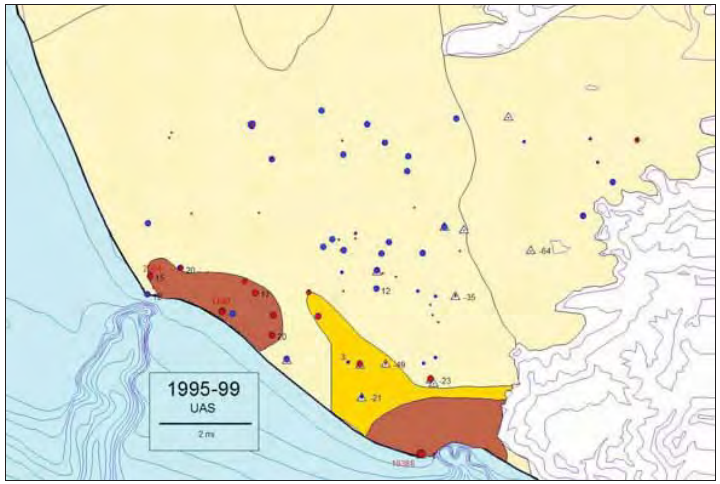

Figure 44 Upper Aquifer System groundwater levels and chloride levels, 1995 to 1999. Legend is shown in Figure 29. Source of saline intruded areas: reddish brown is from seawater; yellow-orange is from sediments. Line in title block is two miles in length.

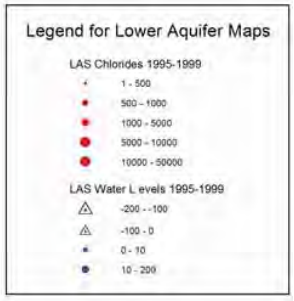

Figure 45. Legend for Figure 46 to Figure 56 for Lower Aquifer System time slices. Chloride concentrations are in mg/L, water level is elevation above or below mean sea level. All maps are

oriented with north to the top of the page. Area of map coincides with location map in Figure 2 in section 2.0 *Background of Groundwater Management and Overdraft Within the FCGMA*.

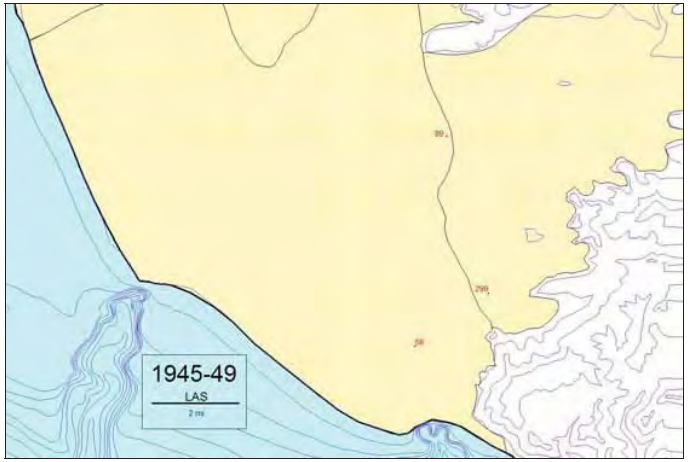

Figure 46. Lower Aquifer System groundwater levels and chloride levels, 1945 to 1949. Legend is shown in Figure 45. Line in title block is two miles in length.

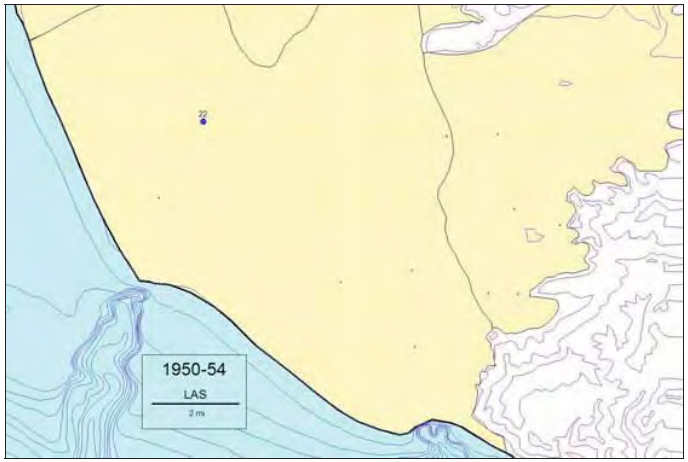

Figure 47. Lower Aquifer System groundwater levels and chloride levels, 1950 to 1954. Legend is shown in Figure 45. Line in title block is two miles in length.

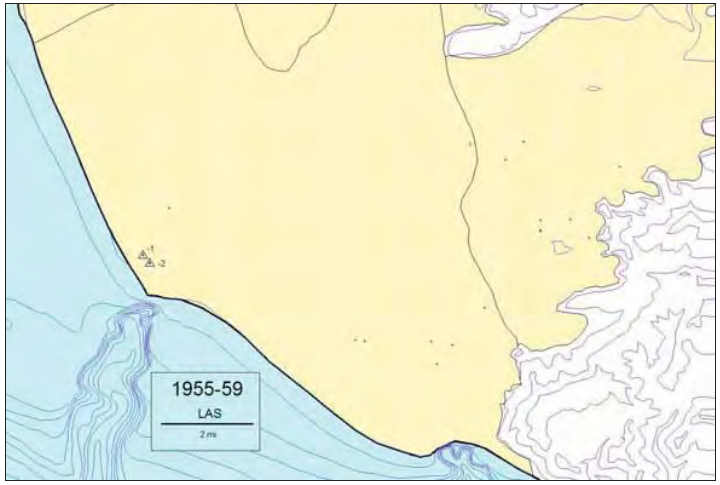

Figure 48. Lower Aquifer System groundwater levels and chloride levels, 1955 to 1959. Legend is shown in Figure 45. Line in title block is two miles in length.

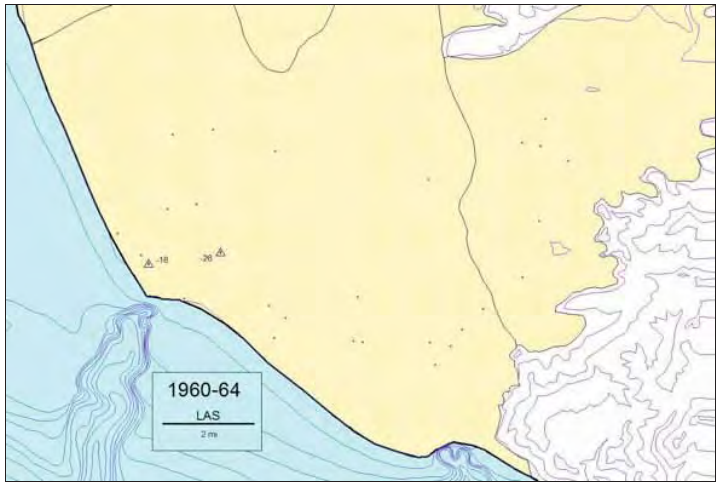

Figure 49. Lower Aquifer System groundwater levels and chloride levels, 1960 to 1964. Legend is shown in Figure 45. Line in title block is two miles in length.

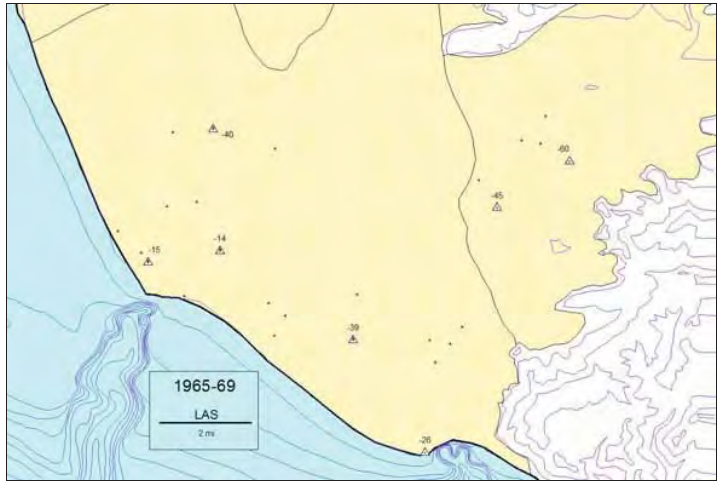

Figure 50. Lower Aquifer System groundwater levels and chloride levels, 1965 to 1969. Legend is shown in Figure 45. Line in title block is two miles in length.

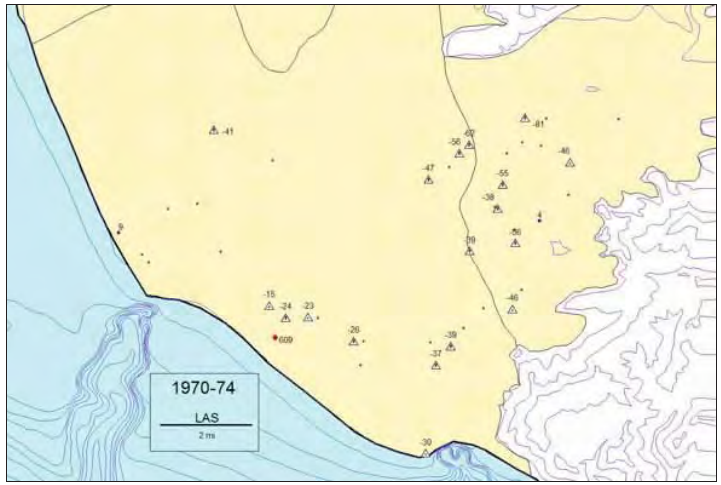

Figure 51. Lower Aquifer System groundwater levels and chloride levels, 1970 to 1974. Legend is shown in Figure 45. Line in title block is two miles in length.

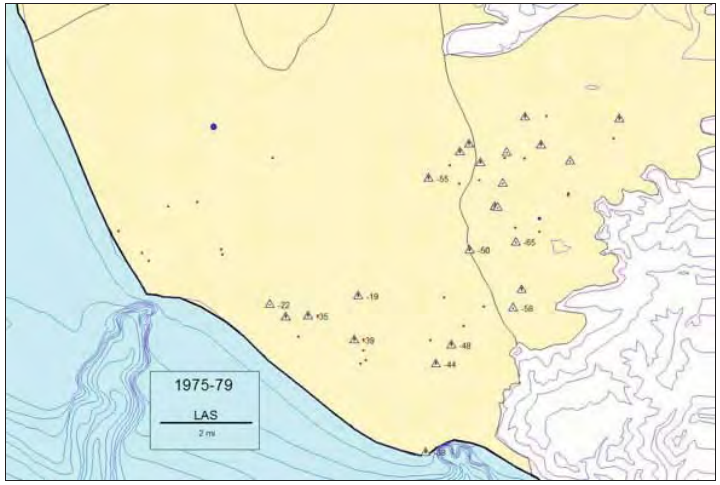

Figure 52. Lower Aquifer System groundwater levels and chloride levels, 1975 to 1979. Legend is shown in Figure 45. Line in title block is two miles in length.

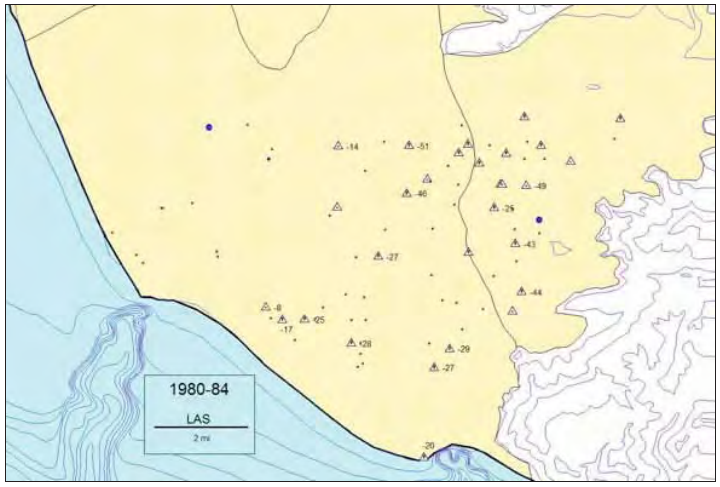

Figure 53. Lower Aquifer System groundwater levels and chloride levels, 1980 to 1984. Legend is shown in Figure 45. Line in title block is two miles in length.

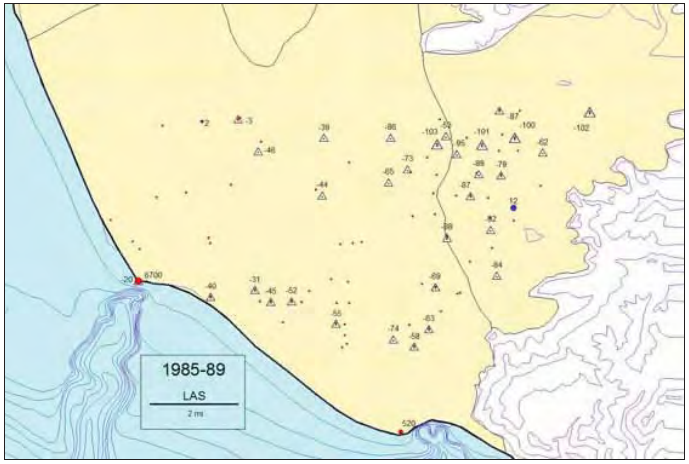

Figure 54. Lower Aquifer System groundwater levels and chloride levels, 1985 to 1989. Legend is shown in Figure 45. Note start of seawater intrusion (red dot) at head of Hueneme Submarine Canyon. Line in title block is two miles in length.

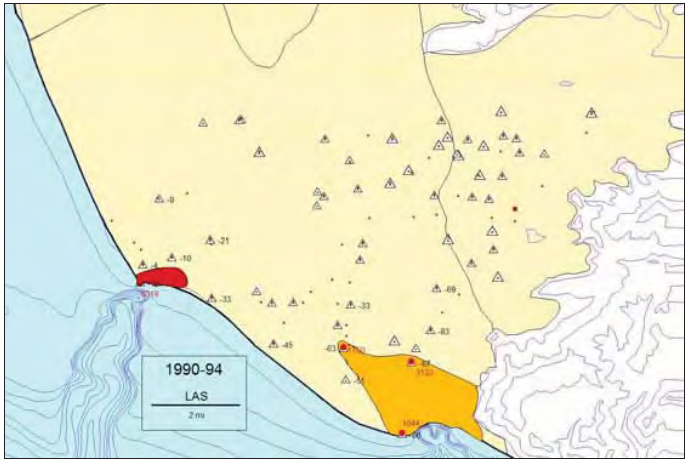

Figure 55. Lower Aquifer System groundwater levels and chloride levels, 1990 to 1994. Legend is shown in Figure 45. Source of saline intruded areas: reddish brown is from seawater; yellow-orange is from sediments. Line in title block is two miles in length.

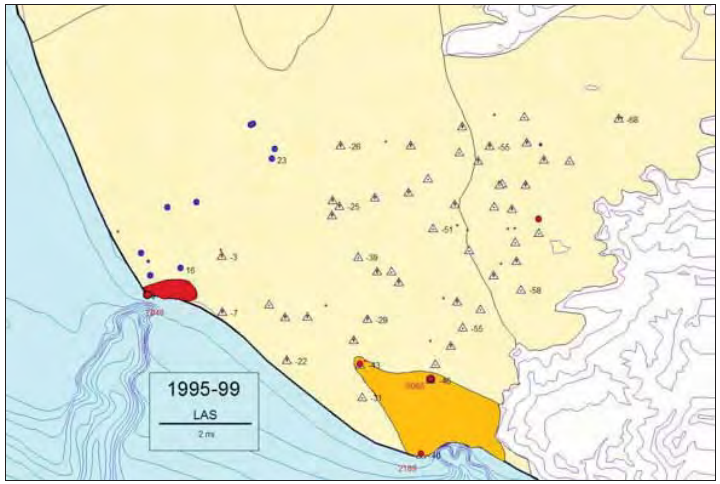

Figure 56. Lower Aquifer System groundwater levels and chloride levels, 1995 to 1999. Legend is shown in Figure 45. Source of saline intruded areas: reddish brown is from seawater; yellow-orange is from sediments. Line in title block is two miles in length.

A2.0 APPENDIX B. - VENTURA REGIONAL GROUNDWATER MODEL

A2.1 INTRODUCTION

The Ventura Regional Groundwater Model is a tool developed to evaluate multifaceted conjunctive use groundwater management projects designed to alleviate seawater intrusion, overdraft, land subsidence and other problems. These projects include in-lieu use of surface water, shifts in pumping and waste water effluent recycling.

The regional groundwater flow model was originally developed by the U.S. Geological Survey (Hanson et al., 2003) as part of the Regional Aquifer Systems Analysis (RASA), jointly funded by United Water Conservation District and Ventura County Water Resources.

The model is a finite difference numerical model which uses the MODFLOW code. The USGS developed an historical model from 1891 to 1993 and a forward model based on 1970 to 1993 hydrology. The original 2 layer model (Upper Aquifer System and Lower

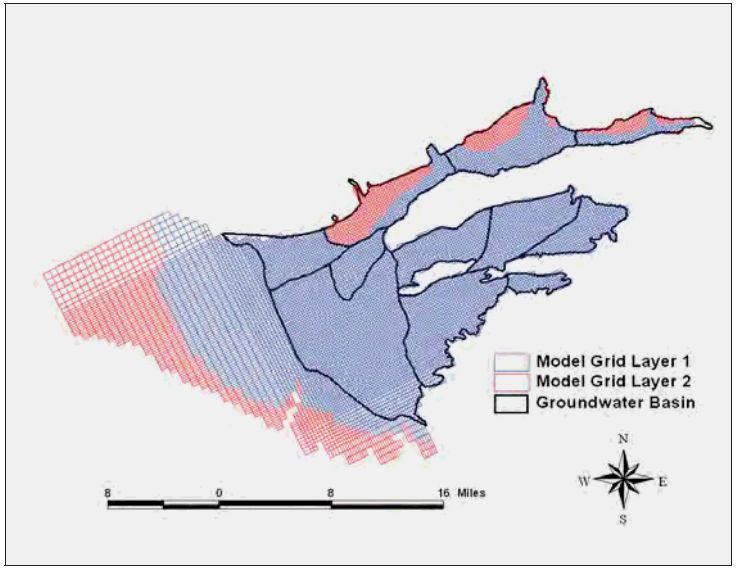

Figure 57. Updated model grid for Ventura Regional Groundwater Model.

Aquifer System) consists of a grid that contains 60 rows and 110 columns for a total of 6,600 cells (Figure 57). Within each cell a groundwater level can be computed. Volume amounts of flow can be computed from cell to cell, basin to basin and from layer to layer. The groundwater

basins within the model include Piru, Fillmore, Santa Paula, Mound, Oxnard Plain Forebay, Oxnard Plain, Pleasant Valley, East Las Posas, West Las Posas, South Las Posas, and Santa Rosa.

Water resource inputs to the model include stream flow, artificial recharge, onshore flow, effluent recharge, recharge on permeable mountain front outcrops, rainfall infiltration on the valley floor, and groundwater storage within the permeable sand and gravel aquifers. Water resource outputs include offshore flow and pumping.

The United Water Conservation District has recently modified the groundwater model. The modifications include the following:

- Model was put on user friendly *Groundwater Vistas* platform. This eliminates having to run the model in DOS.
- Refinement of cell size from 1/2 mile x 1/2 mile to 1/6 mile x 1/6 mile for the alluvial basins. This, for example, enables the artificial recharge water to more accurately be input to the appropriate area instead of overlapping into the river.
- Reduction in grid size. In the original USGS model only 28% of the grid cells are active. In the modified model 47% of grid cells are active (ETIC, 2003).
- Extension of the historical and forward model to include 1994 to 2000 hydrology.
- Addition of a zone of lower hydraulic conductivity in the Lower Aquifer System extending in a linear trend from the Camarillo Hills anti-cline to Port Hueneme. This is to simulate the maximum uplift and truncation of the more permeable upper portion of the Lower Aquifer System along this linear trend.
- Addition of an additional layer in the upper basins of Piru, Fillmore, and Santa Paula to better simulate the more permeable alluvium along the Santa Clara River, Sespe Creek, Santa Paula Creek and Piru Creek.
- Recalibration of the Forebay and Oxnard Plain portions of the model over the period 1983 to 1998 to reflect the increased diversions and recharge that have occurred in this area since the USGS originally calibrated the model (UWCD, 2006b).
- Expansion of the forward model period to a full 55 years that reflect the climate and hydrology of the years 1944 to 1998. This period is a commonly-used base period because it starts and ends in very wet years, spans several wet and dry cycles, and represents zero cumulative departure for rainfall across the period.

The regional groundwater flow model has been used in the following projects and analyses:

- Oxnard Plain LAS and UAS overdraft analysis – UWCD (2001)
- GREAT Project EIR – UWCD and City of Oxnard
- Las Posas Basin ASR project operations – Calleguas MWD
- City of Fillmore water supply planning – UWCD and City of Fillmore
- Pleasant Valley AB303 grant study – UWCD
- Fox Canyon Groundwater Management Agency Groundwater Management Plan – UWCD and FCGMA

A2.2 MODELING FOR THE FCGMA GROUNDWATER MANAGEMENT PLAN

The Ventura Regional Groundwater Model was used to evaluate all FCGMA management strategies that change the water budget within the FCGMA – that is, all projects that have recharge and/or groundwater pumping components. The model is a groundwater flow model, not a chemical transport model, so water quality changes could not be directly tested. However,

water quality changes could be inferred from the groundwater flows and groundwater elevations in cases such as seawater intrusion – we know how high groundwater elevations need to be at the coastline to prevent seawater from intruding into the aquifers.

The method of evaluation of management strategies was straightforward:

1) First, the forward model was used to determine conditions in the aquifer using only existing strategies and facilities (Base Case).

2) Each strategy was independently added to the Base Case and was run through the forward model (one model run for each strategy). A final model simulation combined all the strategies to determine if together they could solve the overdraft conditions. For ease of evaluation, it was assumed that the new strategy was in place at the beginning of the model period and remained in place for the entire model period.

3) Groundwater elevation results for all the time steps within the forward model were extracted for each of the wells for which there are water-level BMOs. Water levels at the BMO wells were compared between the Base Case and the individual management strategy to determine the effect of the strategy in meeting water-level BMOs.

A2.2.1 Base Case

The Base Case included strategies and facilities currently in place. Although the hydrology of the 55 years of the forward model is based on historical data, several other model inputs are different than they were during the historic period. For instance, the Freeman Diversion allows greater diversions now than were possible before it was constructed; these additional diversions are factored into the forward model. Likewise, groundwater extractions have been reduced during the past 15 years and the forward model must reflect these changes. To calculate the correct extractions for the forward model, the 55-year period was divided into dry, average, and wet years depending upon historical rainfall and stream flow for each model year. There were roughly equal numbers of dry, average, and wet years in the model. Representative data for dry, average, and wet years were used to approximate pumping during the model period; the representative pumping included only the previous 15 years since FCGMA pumping has been reduced and was adjusted to reflect the current 15% FCGMA pumping reduction. The average pumping over the 55-year period of the forward model was calculated to be equivalent to the actual average pumping of the past 15 years (adjusted for FCGMA pumping reductions).

The Base Case does not include potential future changes in pumping or recharge – it represents today's social, economic, and water use conditions, but tests the status quo over a range of hydrologic conditions. In this manner, various groundwater management strategies can be modeled and compared to the Base Case with no other changing conditions to complicate the comparison. Additional model simulations could factor in such changes as potential land use conversion (e.g., agriculture to urban), but it is appropriate to have these model simulations separate from the Base Case.

The Base Case is the starting point for each of the management strategies that were evaluated with the model. Each simulation discussed below simply adds the new management strategy to the Base Case for comparison. The only exception is the Combined Strategies simulation, where all the modeled strategies are combined in a single simulation.

Base Case Evaluation	Upper Aquifer	Lower Aquifer
BMO Avg (ft msl)	5.3	17.6
Base Case		
Avg (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%

Table 10. Results of Base Case groundwater model simulation. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.2 Sensitivity Analysis – Understatement of Reported Extractions

Concerns have been voiced that pumping reported to the FCGMA may be understated by agricultural irrigators because of either poorly-calibrated water meters or inaccuracies in using other reporting methods. To test the effect of understated pumping on modeling results, the Base Case was modified to increase agricultural pumping by 15% during all hydrologic conditions (i.e., wet, average, and dry model years). This modified simulation yielded lower groundwater levels, as would be expected (Table 11).

Pumping Sensitivity Analysis	Upper Aquifer	Lower Aquifer
Change in Avg BMO Water Levels (ft)	-7.3	-15.0
Change in % of Time Above BMO	-9%	-3%

Table 11. Change in model results for the Base Case if actual agricultural pumping was increased by 15%. The negative changes indicate that groundwater levels would be lower at BMO wells and the percentage of time that groundwater levels were above BMOs would be less.

The sensitivity analysis indicates that the Base Case modeling results may be overestimating future groundwater levels. However, if the model was recalibrated in the future to correct for any understatement of pumping, it is likely that the results would not look much different than the present Base Case. This would happen because if pumping was increased over the calibration period, then this pumping must be balanced by additional recharge that has not been accounted for. If the re-calibrated model has more recharge, then the increased pumping that would be added to the Base Case would potentially be offset by this increased recharge.

The main conclusion to be drawn from the sensitivity analysis is that the current management strategies for the basin may not be as effective as modeled, but not by any amount that would change conclusions of this Plan. More management strategies are still required, and because most of the modeling effort compares one strategy against another (a comparative rather than an absolute analysis), errors will be relatively small. However, if the meter calibration effort planned by the FCGMA proves that there is indeed understating of pumping, the model should be recalibrated to ensure that errors are marginalized.

A2.2.3 Continuation of 25% Pumping Reduction

This simulation compares attainment of BMOs between current 15% pumping reduction and full 25% pumping reduction. The 15% pumping reduction is the Base Case for the model. Thus, an additional 10% pumping reduction is applied for this comparison simulation. This reduction is applied only to M&I wells because agricultural wells have already taken actions that have reduced pumping in excess of 25% and it is unlikely that any additional steps in changing

irrigation methods will be undertaken before the 2010 date for full implementation of the 25% pumping reductions. .

Pumping for each M&I well in the model is reduced by an additional 10% for the complete model period. This results in 3,800 AFY of reduced pumping across the FCGMA.

The results of this simulation are indicated in Table 12.

25% Reduction Evaluation	Upper Aquifer	Lower Aquifer
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
25% Pumping Reduction		
Avg Level (ft msl)	4.9	-37.8
Improve from Base Case (ft)	1.2	2.2
% of Time Above BMO	53%	7%

Table 12. Results of groundwater model simulation for the continuation of the 25% FCGMA pumping reduction. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.4 RiverPark Recharge Pits

Compares attainment of BMOs between current recharge operations (Base Case) and the addition of the RiverPark Recharge pits. Using UWCD's daily river routing model, available storm flow that is not already diverted by the Freeman Diversion is diverted to the RiverPark Recharge Pits for percolation and recharge. This additional recharge is generally only available during the winter and spring of wetter years when river flow exceeds UWCD's current recharge capabilities. The amount of recharge water applied in any one quarter to the model for the RiverPark pits is calculated in daily increments through the river routing model, and takes into account both water availability and recharge capacity in the pits. The extra recharge varies from an average of 400 AFY in dry years to an average of 11,500 AFY during wet years.

The results of this simulation are indicated in Table 13.

RiverPark Recharge Evaluation	Upper Aquifer	Lower Aquifer
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
RiverPark Recharge		
Avg Level (ft msl)	3.7	-40.0
Improve from Base Case (ft)	<0.1	<0.1
% of Time Above BMO	52%	6%

Table 13. Results of groundwater model simulation for the RiverPark Recharge project. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.5 GREAT Project

This simulation compares attainment of BMOs between current basin operations (Base Case) and the addition of the GREAT project. This simulation was performed in two parts to reflect the two phases of the project that were evaluated in the City of Oxnard's EIR for the project. Although the project phases are in reality scheduled sequentially, the model simulates each phase separately to determine the effectiveness of each. For model purposes, Phase I includes 5,000 AFY of reclaimed water, with one fourth of the water being injected in the Ocean view area of the south Oxnard Plain during the first quarter of each year when agricultural demand is low, and three fourths of the water delivered to agricultural irrigators within the PTP service area in-lieu of pumping their own wells. The City of Oxnard then retrieves the 5,000 AFY of injection/in-lieu recharge (as storage credits) equally from UWCD's O-H well field in the Oxnard Plain Forebay and the City's Water Yard wells located just outside the Forebay.

The Phase II model simulation includes 21,000 AFY of reclaimed water delivered in the same proportions between direct injection and in-lieu deliveries. However, the area receiving reclaimed water for irrigation is expanded to include the Pleasant Valley County Water District delivery area. In addition, the winter injection is accomplished through a series of barrier wells located along Highway 1 and Hueneme Road. The City of Oxnard then retrieves one-third of the 21,000 AFY of injection/in-lieu recharge (as storage credits) from UWCD's O-H well field in the Oxnard Plain Forebay and two-thirds from the City's own wells located just outside the Forebay.

Phase I Results: The results of this simulation are indicated in Table 1. The 8-foot improvement in Lower Aquifer groundwater levels at BMO wells is partially offset by the drop of less than one foot in Upper Aquifer BMO wells. The average drop in groundwater levels in the Oxnard Plain Forebay basin resulting from the extraction of the FCGMA credits is 2 to 3 feet.

GREAT Project Phase I Evaluation	*Upper Aquifer*	*Lower Aquifer*
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
GREAT Project Phase I		
Avg Level (ft msl)	3.4	-31.9
Improve from Base Case (ft)	-0.3	8.1
% of Time Above BMO	51%	9%

Table 1. Results of groundwater model simulation for Phase I of the GREAT project at full capacity. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

Phase II Results: The results of this simulation are indicated in Table 15. The 38-foot improvement in Lower Aquifer groundwater levels at BMO wells is partially offset by the one-foot drop in Upper Aquifer BMO wells. The average drop in groundwater levels in the Oxnard Plain Forebay basin resulting from the extraction of the FCGMA credits is 6 to 11 feet.

GREAT Project Phase II Evaluation	*Upper Aquifer*	*Lower Aquifer*
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
GREAT Project Phase II		
Avg Level (ft msl)	2.6	-1.5
Improve from Base Case (ft)	-1.1	38.5
% of Time Above BMO	51%	36%

Table 15. Results of groundwater model simulation for Phase II of the GREAT project at full capacity. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.6 Shift Some Pumping From LAS to UAS

This simulation compares attainment of BMOs between current basin operations (Base Case) and the shifting of some pumping from the Lower Aquifer back to the Upper Aquifer in critical areas. For purposes of the model scenario, pumping is shifted only in the area of the Oxnard Plain basin where Lower Aquifer groundwater levels are well below sea level (southwest of the zone of low conductance that extends from the Camarillo Hills to Port Hueneme). Actual FCGMA policy might vary from this, but the model run demonstrates the effect of this policy change in a discrete area. In the simulation, 5,000 AFY of Lower Aquifer System pumping is moved to nearby Upper Aquifer System wells (or new UAS wells if necessary). There is no shift in pumping in areas where UAS water quality is not suitable for irrigation.

The results of this simulation are indicated in Table 16.

LAS to UAS Evaluation	*Upper Aquifer*	*Lower Aquifer*
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
LAS to UAS Shift		
Avg Level (ft msl)	2.6	-31.8
Improve from Base Case (ft)	-1.1	8.2
% of Time Above BMO	50%	9%

Table 16. Results of groundwater model simulation for shifting 5,000 AFY of pumping from the Lower to the Upper Aquifer in the south Oxnard Plain basin. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.7 Import Additional State Water

This scenario compares attainment of BMOs between current basin operations (Base Case) and the purchase and recharge of additional State Water. For the purposes of this model simulation, an additional 10,000 AF of State Water is purchased during average and dry years, delivered to Lake Piru, and then released down the Santa Clara River as part of UWCD's

normal conservation release. The portion of this water that is likely to reach the Freeman Diversion, as calculated separately using UWCD's daily river routing model, is then diverted at the Freeman Diversion and recharged in UWCD's spreading ponds in the Oxnard Plain Forebay basin.

The results of this simulation are indicated in Table 17. Average groundwater levels in the Oxnard Plain Forebay basin would be 4 to 6 ft higher than the Base Case, providing mitigation for other strategies that have a component of pumping additional groundwater from the Forebay.

Import State Water Evaluation	*Upper Aquifer*	*Lower Aquifer*
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
Import SWP		
Avg Level (ft msl)	5.5	-38.7
Improve from Base Case (ft)	1.8	1.3
% of Time Above BMO	54%	7%

Table 17. Results of groundwater model simulation of importing additional State Water. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.8 Increase Diversions from Santa Clara River

This simulation compares attainment of BMOs between current basin operations (Base Case) and increasing recharge from the Santa Clara River during periods of high storm flow. For purposes of this model simulation, it is assumed that the diversion rate and license of the Freeman Diversion is increased to 1,000 cfs from its current 375 cfs. Thus, during times of high flow, up to 1,000 cfs could be diverted. These additional diversions are recharged at UWCD's facilities according to their unused capacity, as determined by UWCD's daily river routing model. For purposes of the model scenario, it is assumed that the RiverPark recharge facility is available and that the Ferro gravel pit has been converted to use for recharge and storage.

The results of this simulation are indicated in Table 18. Average groundwater levels in the Oxnard Plain Forebay basin would be 6 ft higher than the Base Case, providing mitigation for other strategies that have a component of pumping additional groundwater from the Forebay.

Increase Diversions Evaluation	*Upper Aquifer*	*Lower Aquifer*
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
Increase Diversions		
Avg Level (ft msl)	6.4	-37.4
Improve from Base Case (ft)	2.7	2.6
% of Time Above BMO	54%	8%

Table 18. Results of groundwater model simulation for increasing diversions from the Santa Clara River. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.9 Additional In-Lieu Deliveries to South Oxnard Plain

This model scenario compares attainment of BMOs between current basin operations (Base Case) and the delivery of additional in-lieu recharge water to the south Oxnard Plain. For purposes of this model simulation, it is assumed that there are 3,000 AFY of in-lieu water available for delivery to irrigation irrigators in the area south of the end of the PTP Pipeline. This in-lieu water delivery is adjusted for changes in quarterly agricultural demand.

The results of this simulation are indicated in Table 19.

In-Lieu S Oxnard Plain Evaluation	*Upper Aquifer*	*Lower Aquifer*
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
In-Lieu S Oxnard Plain		
Avg Level (ft msl)	4.9	-35.9
Improve from Base Case (ft)	1.2	4.1
% of Time Above BMO	53%	7%

Table 19. Results of groundwater model simulation of delivering additional in-lieu water to pumpers on the southern Oxnard Plain basin. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.10 Shift Some Pumping to Northwest Oxnard Plain

This simulation compares attainment of BMOs between current basin operations (Base Case) and shifting some pumping to the northwest Oxnard Plain from areas less easily recharged. For this model simulation, it is assumed that 2,000 AFY of M&I pumping is moved from the portion of the Oxnard Plain near the Forebay basin to the northwest Oxnard Plain. This pumping is shifted from the City of Oxnard's Water Yard and Blending Station to the area within 2 miles of the ocean along Gonzalez Rd.

The results of this simulation are indicated in Table 20.

Shift NW Oxnard Plain Evaluation	Upper Aquifer	Lower Aquifer
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
Shift NW Oxnard Plain		
Avg Level (ft msl)	3.9	-39.7
Improve from Base Case (ft)	0.2	0.3
% of Time Above BMO	51%	5%

Table 20. Results of groundwater model simulation of shifting some pumping to the northwestern portion of the Oxnard Plain basin. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.11 Injection of Treated River Water in Overdrafted Basins

This model scenario compares attainment of BMOs between current basin operations (Base Case) and the injection of treated river water into the south Oxnard Plain and Pleasant Valley areas when there are unused river diversions either during the wet portion of the year or during extended times during very wet years. The rate of injection was varied from 1,500 AFY during dry years to 5,000 AFY during wet years. For purposes of this simulation, it is assumed that the injection sites are located both within the PTP system and the Pleasant Valley CWD service area along the deepest portion of LAS pumping depression.

The results of this simulation are indicated in Table 21.

Injecting River Water Evaluation	Upper Aquifer	Lower Aquifer
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
Injecting River Water		
Avg Level (ft msl)	5.0	-32.6
Improve from Base Case (ft)	1.3	7.4
% of Time Above BMO	53%	11%

Table 21. Results of groundwater model simulation of injecting treated river water in the south Oxnard Plain and Pleasant Valley areas. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.12 Switch Location of City of Camarillo Pumping

To test the effectiveness of moving pumping from near the Camarillo airport to an area along the Arroyo Las Posas (see section 9.3 *Development of Brackish Groundwater, Pleasant Valley Basin*), the pumping from the airport well was eliminated for the model simulation. Model results indicate that the worst portion of the pumping depression would be decreased considerably in size, leaving a smaller depression in the southern Pleasant Valley basin (Figure 58).

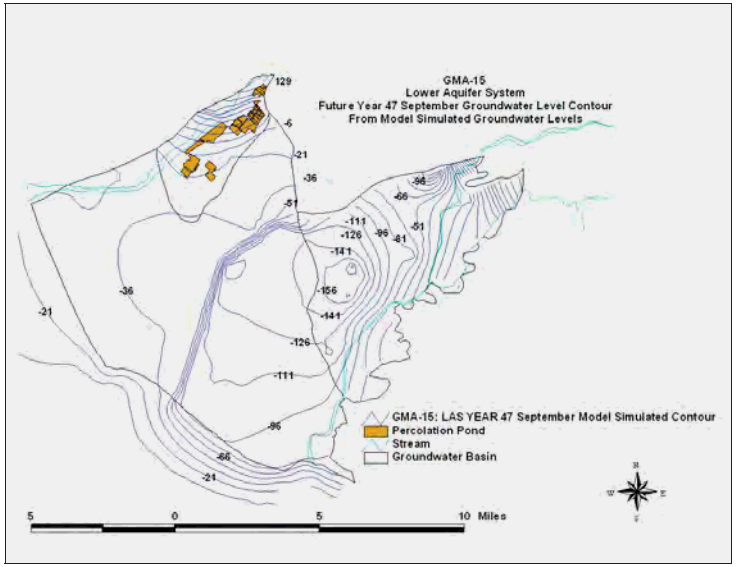

Figure 58. Simulated groundwater elevations for the LAS during the model year corresponding to the 1990 drought year, when the pumping trough beneath Pleasant Valley and the south Oxnard Plain was most pronounced. The elimination of pumping from the City's airport well decreased the size of the northern portion of the pumping depression.

A2.2.13 Full-Time Barrier Wells in South Oxnard Plain

This simulation compares attainment of BMOs between current basin operations (Base Case) and the use of barrier wells in the south Oxnard Plain to build a recharge mound that prevents coastal chloride contamination from moving further inland. The effectiveness of barrier wells was partially tested for the GREAT project. This simulation assumes that there is water available during the entire year for injection – the actual water available would likely be a combination of recycled water and other water sources. To dovetail with the GREAT simulation's winter-only injection scenario, the water available for injection in the barrier wells was modeled at 21,000 AFY, which was injected at a constant rate throughout the year. The barrier wells used in the simulation are identical to the locations of the GREAT Phase II barrier wells along Highway 1 and Hueneme Road.

The results of this simulation are indicated in Table 22.

Barrier Wells Evaluation	Upper Aquifer	Lower Aquifer
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
Barrier Wells		
Avg Level (ft msl)	15.2	6.5
Improve from Base Case (ft)	11.5	46.5
% of Time Above BMO	63%	48%

Table 22. Results of groundwater model simulation for a barrier well project in the south Oxnard Plain. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A2.2.14 Combined Management Strategies

The management strategies used in the previous simulations were combined in a single model run to determine their overall combined effect in reaching BMOs. This model simulation is an indicator of whether additional management strategies are needed beyond those in this Plan.

The results of this simulation are indicated in Table 23. The most important result is that the combined management strategies allow BMOs to be met 67% of the time in the Upper Aquifer and 76% of the time in the Lower Aquifer. This result suggests that if all the management strategies in the Plan are implemented, the basin would be relatively safe from saline intrusion (see discussion in section 7.0 *Yield of the Groundwater Basins* on level of attainment of BMOs).

Combined Strategies Evaluation	Upper Aquifer	Lower Aquifer
BMO Avg Level (ft msl)	5.3	17.6
Base Case		
Avg Level (ft msl)	3.7	-40.0
% of Time Above BMO	51%	5%
Combined Strategies		
Avg Level (ft msl)	18.4	59.8
Improve from Base Case (ft)	14.7	99.8
% of Time Above BMO	67%	76%

Table 23. Results of groundwater model simulation of implementing the combination of all the management strategies evaluated using the groundwater model. Groundwater elevations are averages for Upper and Lower Aquifer wells for which there is a groundwater elevation BMO. Also indicated is the percentage of time (weekly time steps) that groundwater elevations were above the BMO elevation for each BMO well.

A3.0 APPENDIX C. EAST LAS POSAS BASIN MANAGEMENT PLAN

During the February 23, 1994 meeting, the Board of Directors of the FCGMA conditionally approved CMWD's Application for the Injection/Storage Facilities in the North Los Posas Basin. (**Note:** The reference to the North Las Posas Basin stems from the FCGMA original Groundwater Management Plan adopted in 1985. The current correct reference is the East Las Posas Basin).

This approval was conditioned upon several factors including but not limited to: (1) a maximum of 20 injection/storage wells registered with the FCGMA; (2) well injection/extraction schedule determined by availability of water and needs of CMWD's customers; (3) continuous injection period well testing and monthly reporting of acre-feet injected/extracted from wells along with water quality analysis for selected constituents to the FCGMA by CMWD; (4) maximum storage limit of 300,000 acre-feet without further approval of the FCGMA; (5) extraction/injection points shall be coterminous, or in proximate vicinity and coordinated with the FCGMA; (6) water stored in such facilities shall be used in Ventura County; (7) CMWD periodic review of the effects of the injection on surrounding basins to ensure no detrimental effect; (8) CMWD shall have an affirmative obligation to mitigate any detrimental effects found; and (9) FCGMA approval standards for the injection/storage wells shall be mandatory. These conditions were memorialized in a July 12, 1994 letter from Lowell Preston, Ph.D., Agency Coordinator, to Eric Berg, Administrator, CMWD (See Appendix C - Exhibit A).

Subsequently to FCGMA's above mentioned approval, CMWD engaged in several years of discussions about groundwater issues in the Las Posas basin with members of the East Las Posas Basin Users Group (the Group) and individual pumpers. This informal Group, which meets every second month, discusses both basin-wide groundwater issues and potential issues related to Calleguas' Las Posas Basin ASR project.

As a result of those discussions, CMWD and the Group developed the East Los Posas Basin Management Plan (ELPBMP). The ELPBMP, which outlines a monitoring program for the injection/storage wells, establishes action levels, sets stakeholder responsibilities for operation of the ASR project by CMWD, and provides for a dispute resolution mechanism between the parties, attempts to manage the ASR project in such a way as to minimize problems and maximize the beneficial use of groundwater within the East Las Posas Basin..

The ELPBMP is attached to the FCGMA Management Plan as Appendix C. It is understood by the parties that the East Las Posas Basin Management Plan will be reviewed and updated regularly as conditions warrant it.

The Plan begins on the following page.

EAST LAS POSAS BASIN MANAGEMENT PLAN

THIS MANAGEMENT PLAN FOR THE EAST LAS POSAS BASIN (the "Plan"**)** is effective as of _____, 2006, and is created with reference to the following recitals of fact, understandings and intentions:

RECITALS

A. Calleguas Municipal Water District ("Calleguas") operates an Aquifer Storage and Recovery Project ("ASR") for the benefit of its urban, industrial and agricultural water delivery customers in the Las Posas Basin ("Basin") in Ventura County, California.

B. The Basin is identified as a groundwater subsystem within the boundaries of the Fox Canyon Groundwater Management Agency ("GMA").

C. The ASR project stores potable water in the aquifers of the Basin for use during emergencies and drought periods.

D. The Las Posas Basin Pumpers extract groundwater from the Basin for beneficial uses that include agricultural, domestic, urban and industrial uses. The "Las Posas Basin Pumpers" includes members of the Las Posas Basin Users Group and all other persons or entities extracting groundwater from the East Las Posas Basin (within the boundaries of the GMA).

E. Calleguas and the Las Posas Basin Pumpers desire to manage the groundwater basin such that the ASR project and the Las Posas Basin Pumpers' beneficial uses co-exist to the benefit of all.

F. Calleguas has previously entered into an agreement with the GMA for operation of the ASR project ("Calleguas-GMA Agreement"). A copy of the Calleguas-GMA Agreement is attached hereto as Exhibit "A" and incorporated herein by reference. The Calleguas-GMA Agreement describes the general principles within which the ASR project will operate.

G. Pursuant to the Calleguas-GMA Agreement, stored water is credited to the ASR project when Calleguas either injects potable water into the aquifer through wells or when water is delivered by or through Calleguas to the Las Posas Basin Pumpers in lieu of pumping groundwater. The storage credit pursuant to the Calleguas-GMA Agreement remains in the Basin until the stored water is extracted.

H. Calleguas and the Las Posas Basin Pumpers desire to have the GMA incorporate the terms of this Plan into the updated GMA plan.

NOW, THEREFORE, in consideration of the mutual benefits, covenants and promises set forth herein, the Management Plan for the East Las Posas Basin is as follows:

1. Monitoring Program. Calleguas will maintain a monitoring program to track changes in groundwater levels and groundwater quality in the Basin. This monitoring program will consist of two parts: (1) a set of four representative key wells spaced throughout the Basin

("baseline key wells") will monitor the overall health of the Basin (Exhibit "B" and identified by State Well number); and (2) a set of monitoring and producing wells on parcels within or adjacent to the ASR project ("local vicinity wells") will monitor the effects of the ASR injection and pumping on the Basin (Exhibit "C").

2. Report of Results of Monitoring Program. Calleguas will report results of the monitoring program described in paragraph 1 above in writing to the Las Posas Basin Pumpers at least every six (6) months during noticed meetings of the Las Posas Basin Users Group. In addition, Calleguas will prepare a written report on ASR activities, monitoring results and the state of the Basin annually, and that report will also be made available to the Las Posas Basin Users Group.

3. Extractions and Storage Credits. Calleguas covenants and promises that it will only extract water consistent with the Calleguas-GMA Agreement and in an amount which does not exceed Calleguas' storage credits in the Basin, as they may exist at any time. Calleguas will apply for storage credits from the GMA annually based on the amount of water injected and in lieu water delivered that year; the GMA will maintain the storage credit balance for the ASR project and will give written notice to the Las Posas Basin Users Group of the amount of those credits annually and provide a report directly to the Las Posas Basin Users Group every six months as to the amount of storage and extractions which have occurred.

4. Operation of ASR Project. Calleguas will operate the ASR project in a manner that does not adversely affect the Basin by creating, by way of example only, chronic declining water levels, increased levels of TDS or chlorides, significant increased pumping lifts, or saline intrusion. It is acknowledged that all currently available information indicates that the Basin may be in overdraft. Although it is not projected that the ASR project will alleviate the overdraft, Calleguas will make a good faith effort to assist the Las Posas Basin Pumpers in reducing the overdraft. Additionally, it is recognized that there is a mound of high-chloride, high-TDS water migrating into the Basin from beneath the Arroyo Las Posas. Calleguas will assist in mitigating this water quality problem by facilitating projects that will pump this poor-quality water, treat it for agricultural and drinking water use and discharge the resulting brine into a regional brine line. To keep Las Posas Basin Pumpers informed of ASR operations, Calleguas will provide a summary sheet of injections and extractions relating to ASR operations at every Las Posas Basin Users Group meeting (held approximately every two months, but no less than 4 times a year). This summary will discuss, among other things, all injection, extraction and in-lieu activities for the two months prior to the meeting. This summary will also be provided to the GMA.

5. Groundwater Levels. Calleguas will operate the ASR project in a manner which will not significantly impact Las Posas Basin Pumpers' ability to use groundwater from the Basin. Impacts will be measured on two levels – basin-wide and local. Basin-wide impacts will be measured using the four baseline key wells. Local impacts will be measured using the local vicinity wells.

Basin-Wide Effects: In order to establish groundwater levels that would exist without the ASR project ("baseline"), the USGS Santa Clara-Calleguas MODFLOW groundwater flow model, as updated by United Water Conservation District and Calleguas, will be used in conjunction with the four baseline key wells. The baseline will be established by running the groundwater model every two years using all available actual pumping and hydrologic data for the period, but excluding any ASR injection/extraction operations or water deliveries in-lieu of injection. The first run of the model for purposes of this Plan will be as follows: The modeled "no ASR project" groundwater levels determined as of September 1, 2006, at the four baseline key

wells would establish the baseline for the two-year period. If actual measured water levels fall below the baseline in any of the baseline key wells during the applicable two-year period, then the cause of the groundwater level decline below the baseline will be investigated by Calleguas within 45 days of Calleguas learning of the measured water level falling below the baseline. If the water level drop below baseline is determined to be caused by ASR operations, then Calleguas will present a written plan to the Las Posas Basin Pumpers to mitigate the excess drawdown. That written plan will be presented by Calleguas to the Las Posas Basin Users Group no later than 120 days after Calleguas learns that measured water levels are below baseline.

Local Effects: In the vicinity of the ASR injection/extraction wells, it is recognized that groundwater levels will fluctuate depending upon rates of injection/extraction and proximity to the wells. Nearby wells will see groundwater levels rise and pumping lifts decrease during and following injections of stored water. During extractions of stored water, groundwater levels in the vicinity of the extraction may decrease below levels normally seen in nearby wells, with this pumping effect dissipating when extraction is terminated. Calleguas will use all reasonable efforts to insure that nearby wells can continue to be pumped during this extraction period; if lowered water levels create operational problems such as the inability to pump groundwater because groundwater levels are below pump bowls or the pump breaks suction in any nearby well, Calleguas will attempt to assist well owners in mitigating the problem. Such mitigation measures may include, among other things, providing in-lieu water to well owners at prevailing rates.

6. Disputes. If any dispute arises over the effects of the ASR program and this Plan, the specifics of the dispute will first be presented within 45 days of the dispute arising to an advisory group of members of the Las Posas Basin Users Group numbering not less than 5. If the dispute is not resolved within 45 days after submittal to the advisory group, the dispute shall be presented to Calleguas in writing. Calleguas will then, within 45 days of receiving written notice of the dispute, investigate the issues in the dispute, including performing any hydrogeologic investigation where appropriate. The disputing party will not unreasonably withhold access to historic groundwater data known to the party or access to wells for monitoring. Calleguas will, within 120 days, give a written reply to the disputing party which will include results of any hydrogeologic investigation. In the event that the party is not satisfied by this procedure, the disputing party can deliver a copy of the written dispute to the GMA. If the GMA does not resolve the problem to the satisfaction of the disputing party within 120 days of the delivery of a copy of the written dispute to the GMA, then the disputing party can take whatever legal action it deems appropriate.

7. Term. This Plan shall remain in effect so long as the Calleguas-GMA Agreement remains in effect.

8. Existing Water Rights Unaffected. This Plan and the ASR project shall in no way affect or alter existing water rights in the Basin or grant new or additional water rights to Calleguas or the Las Posas Basin Pumpers (other than the specific rights of injection and extraction granted herein). All injections or extractions are done with the knowledge and consent of the Las Posas Basin Pumpers and under no circumstances will any injections or extractions or pumping under this Plan ripen into a claim for prescriptive or superior rights.

9. Condition of Basin. This Plan is made with the express understanding and assumption that the Basin is of such condition that any water injected by Calleguas into the Basin will remain in the Basin until extracted by Calleguas (or by other pumpers). If this

understanding/assumption is determined to be incorrect or determined to be substantially called into question, then **either** Calleguas or the Las Posas Basin Pumpers may immediately proceed to dispute resolution as set forth in Section 6 above.

END OF PLAN

A3.1 **EXHIBIT "A"**

FOX CANYON
GROUNDWATER MANAGEMENT AGENCY

BOARD OF DIRECTORS
Jon E. Maulhardt, Chair
Jan E. Flynn
Sam McIntyre
James Daniels
Michael Lavery

AGENCY COORDINATOR
Lowell Preston, Ph.D.

July 12, 1994

Eric Berg, Projects Administrator
Calleguas Municipal Water District
2100 Olsen Road
Thousand Oaks, CA 91360-6800

SUBJECT: BOARD APPROVAL OF CMWD APPLICATION FOR INJECTION/STORAGE FACILITIES IN NORTH LAS POSAS GROUNDWATER BASIN

Dear Mr. Berg:

At the Board of Directors meeting on February 23, 1994, the Board approved the CMWD application for injection/storage facilities in the North Las Posas Basin. The approval of this application, as provided for under Ordinance 5.3, was subject to the conditions that follow. These conditions include several changes and additions requested by the Board of Directors.

NORTH LAS POSAS BASIN
INJECTION/STORAGE FACILITIES CONDITIONS

1. *The identification, size, depth, well logs and location of wells used for injection/extraction will be registered with the GMA. A maximum of twenty (20) wells all to be permitted by the County of Ventura, Public Works Agency, and registered with the GMA.*

2. *Calleguas will inject/extract on a schedule determined by availability of water to inject and the needs of their customers. The number of acre-feet injected/extracted from each well shall be reported to the GMA monthly. The monthly report shall also include a water quality analysis for the injected water that covers and conforms to the limits listed for the following items:*

a.	Sodium Adsorption Ratio (SAR) calculated in meq/l as $SAR=NA/((CA+Mg)/2)^{.5}$	≥1≤4	
b.	Total Dissolved Solids (TDS) Electrical conductivity (EC)	≥100≤800 ≤1100	mg/l uMHO
c.	Chloride (Cl)	≤120	mg/l
d.	Boron (H_3Bo_3)	≤1	mg/l
e.	Nitrates	≤45	mg/l

(NOTE: These limits are based on University of California research. Should the University reverse these limits, the recommended changes will be incorporated into these conditions.)

800 South Victoria Avenue, Ventura, CA 93009
(805) 654-2088 FAX:(805) 654-3952

Eric Berg
Page Two
July 12, 1994

Testing shall be conducted monthly during periods of continuous injection, prior to beginning an injection of more than one hundred (100) acre-feet (but no more frequently than monthly), and as frequently as necessary when a change in water quality is suspected or known to exist.

3. *The total water in storage at any one time shall not exceed three hundred thousand (300,000) acre-feet (AF) unless approved by the GMA Board of Directors.*

4. *The point of extraction shall be the same as the point of injection or in the near vicinity. Extraction from points other than that of injection may be desirable and shall be coordinated with, and approved by the GMA.*

5. *Water stored by the facility shall be used in Ventura County.*

6. *Calleguas shall periodically review the effects of the injection on surrounding basins to ensure no detrimental effects result from the injection alone or in combination with natural recharge. Should negative effects exist, Calleguas shall take action to mitigate those effects caused by the injection program.*

7. *Should the injected water or conditions deviate from these standards, injection will stop, or not be started until the condition has been corrected.*

If you have any questions regarding this Agency's approval of your project facilities, please call Rick Farnsworth at 654-2327 or myself at 648-9204.

Very truly yours,

Lowell Preston, Ph.D.
Agency Coordinator

RF:vg

A3.2 EXHIBIT "B"

Key wells will be used to monitor the overall health of the basin (Figure B-1). These wells, which have a long historic monitoring record of groundwater levels, include State Well Numbers 2N/20W-8F1, 2N/20W-9F1, 3N/20W-34G1, and 3N/19W-29K4.

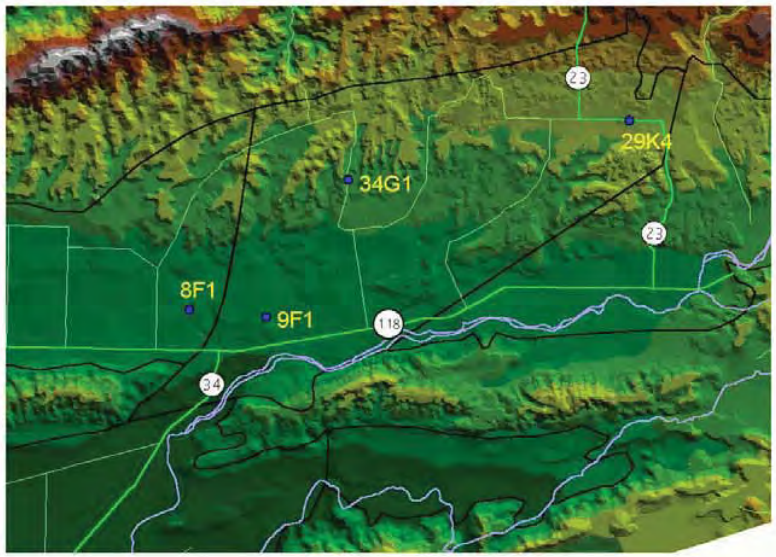

Figure B-1. Key wells in the Las Posas basin.

A3.3 EXHIBIT "C"

Calleguas Municipal Water District will monitor the effects of its Las Posas Basin ASR project using both its ASR wells and additional monitoring points surrounding the ASR project (Figure C-1). These additional monitoring points will consist of existing production wells or, where necessary to complete the area 1 coverage, new monitoring well(s) installed by Calleguas MWD.

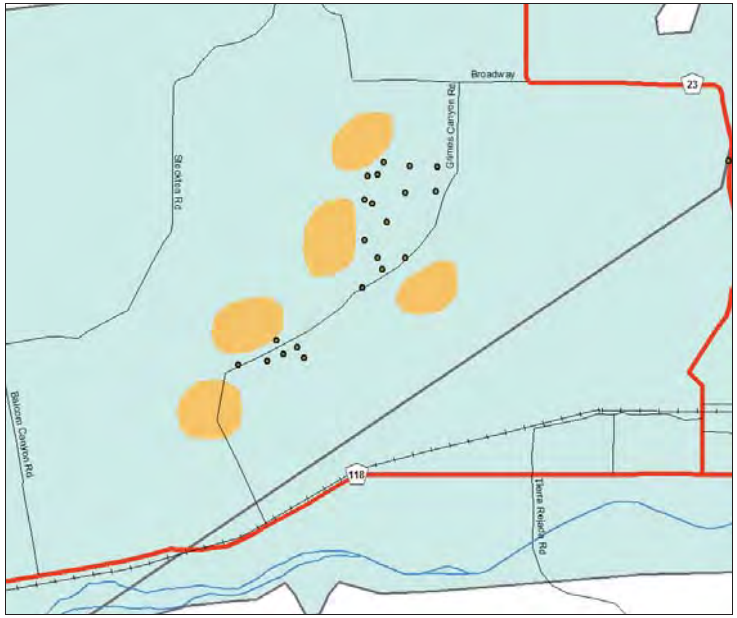

Figure C-1. Locations (indicated by orange circular areas) of monitoring to track the effects of ASR injection and pumping. Dots represent Calleguas MWD ASR wells.

A4.0 APPENDIX D. RESPONSE TO PUBLIC COMMENTS ON THE FCGMA GROUNDWATER MANAGEMENT PLAN

The development of the final FCGMA Groundwater Management Plan involved the release of three separate written drafts between June 2006 and February 2007, presenting the Plan at three public workshops over the same time period, and presenting the Final Plan at a special meeting for the Agency's Board of Directors in March 2007. The Agency accepted public comments throughout the Plan development process.

This section is a compilation of the written public comments to the Plan submitted to the Agency between June 2006 and April 2007. The first part contains a verbatim transcription of each comment and a specific Agency response to each comment. The second part contains a reproduction of the original public comment document.

FCGMA responses to written comments submitted on behalf of the City of Oxnard, City of Camarillo, and Crestview Mutual Water Company (Crestview) by:
Robert J. Saperstein
HATCH & PARENT
A Law Corporation
Santa Barbara, CA

1. ***Oxnard, Camarillo, and Crestview's Comment:*** *GMA Board attendance at the workshops. While we understand the time commitment is extensive, this update to the Management Plan is very important. It will guide GMA policy and decision-making for years to come. We are not sure how the GMA Board can obtain adequate familiarity with all the issues and the constituents' concerns without some attendance at the workshops. No board members attended the first workshop.*

Response to Oxnard, Camarillo, and Crestview's Comment #1: This issue was subsequently resolved by the Board member attendance at subsequent workshops and the Special Groundwater Management Plan Workshop held on March 9, 2007. Four Directors and two Alternate Directors were in attendance at this Workshop. Minutes for this meeting have been included in this Appendix (D) to the Groundwater Management Plan.

2. ***Oxnard, Camarillo, and Crestview's Comment: Executive Summary****. This Section is written as part introduction and part summary. An Executive Summary is normally drafted when the remainder of the document is complete. Given the length and technical nature of the material, the Executive Summary will be the most important Section of the Plan. It may be the only portion of the document many individuals read. It should summarize the purpose, issues and recommendations, once all of the technical work is complete.*

Response to Oxnard, Camarillo, and Crestview's Comment #2: Taking this suggestion, the Executive Summary was put on hold until the final draft. The final version now includes an Executive Summary

3. ***Oxnard, Camarillo, and Crestview's Comment: Acknowledgements.*** *Throughout the document, there is repetitive recognition of United and Calleguas as the two entities who contribute to the GMA. This recognition is limited almost exclusively to these two entities. Either this self-congratulatory language should be eliminated, or there should be proper acknowledgement of the work of all the individuals and agencies who have and continue to contribute to the GMA's success.*

Response to Oxnard, Camarillo, and Crestview's Comment #3: The final Fox Canyon Groundwater Management Plan (Plan) acknowledges the contributions many contributors including members of the three sponsoring agencies (Fox Canyon Groundwater Management Agency, United Water Conservation District, Calleguas Municipal Water District) as well as six other stakeholders who provided written comments, reviews, or provided other material input to the completion of the plan. Any other omission of other individual who provided contributions to the completion of the FCGMP is the result of simple oversight.

4. ***Oxnard, Camarillo, and Crestview's Comment:*** *Modeling. There needs to be a distinct Section that better describes the model details used for the technical analysis. This Section need not be long, but it should include mention of the software, construction, assumptions and details of the model construct. It ought to give enough information for the technically capable reader to understand its basics.*

Response to Oxnard, Camarillo, and Crestview's Comment #4: There is now a considerable discussion of the modeling approach, assumptions, limitations, and modeling

results included as Appendix B of the final FCGMP. While not an exhaustive technical discussion of model development and results, it provides a thorough and meaningful summary of the model approach and its use in the development and analysis of various policies developed in the Plan.

5. ***Oxnard, Camarillo, and Crestview's Comment: Organization and Redundancy.*** *There is tremendous redundancy in the report. Perhaps with different organization, it could be slimmed down significantly. You might describe the water quality and quantity issues generally applicable to all areas, along with the general concept of basin management objectives. Then discuss all the issues comprehensively, separated for each basin or in some cases regions with multiple basins. As an alternative, some of the nonessential background and detailed technical information might be moved to appendices.*

Response to Oxnard, Camarillo, and Crestview's Comment #5: The final Plan has been reorganized and indexed to limit redundancies and improve the organizational structure. Due to the interrelated nature and technical complexity of many of the water quality, water quantity, and public policy issues, some redundancy is necessary to provide the appropriate context for specific topics.

6. ***Oxnard, Camarillo, and Crestview's Comment: Management Strategies: Organization.*** *In a fashion, the Management Plan is really several separate management plans. Perhaps it should be organized by basin for the three content subjects: strategies under development, future strategies and actions to attain BMO's. There may need to be one more general Section that addresses those strategies that cross basin boundaries. You may be able to combine all the basin specific discussions in one Section for each basin. A couple different organizational approaches might be tested, with the goal of, reducing redundancy and volume of text.*

Response to Oxnard, Camarillo, and Crestview's Comment #6: See the response to Oxnard, Camarillo, and Crestview's Comment #5.

7. ***Oxnard, Camarillo, and Crestview's Comment: Specific strategy: Forebay priorities****. The potential over-reliance on the Forebay under certain conditions is acknowledged in the document. However, there is no mention of the importance, from a policy perspective, to establish some hierarchy for use of the Forebay. There will be increasing reliance on the Forebay. To the extent access to the Forebay may be limited under certain conditions; the GMA board must consider limiting certain uses before others.*

Response to Oxnard, Camarillo, and Crestview's Comment #7: As implied by Oxnard, Camarillo, and Crestview's Comment #7, the Plan acknowledges that the Oxnard Plain Forebay Basin represents one of the most significant sources of subsurface storage and recharge within the FCGMA. Specific groundwater management strategies directly involving the use of the Oxnard Plain Forebay Basin have been addressed in Sections 10.1.4, 10.1.5, 10.1.7. Other policy recommendations are addressed in Sections 11.2.2, 11.3.6, and 11.3.7. Through its discussion in these Sections as well as its implicit inclusion other strategies, the Plan acknowledges the significance and challenge of prioritizing use of the Oxnard Plain Forebay Basin. The Oxnard Plain Forebay Basin will remain a source of significant consideration and focus in the development of effective future strategies.

8. ***Oxnard, Camarillo, and Crestview's Comment: Specific strategy: Transfers across basins.*** *There is no direct mention that transfers (of allocation or credits) from challenged areas to areas of abundance may be the simplest method of mitigating problems. This has been a policy not favored in the past. However, this is an appropriate time to reconsider this*

question, particularly if the technical analysis suggests that a surgical approach is required to solve certain problem areas.

Response to Oxnard, Camarillo, and Crestview's Comment #8: Allocation or Credit transfers are now discussed in relation to several strategies that would physically move water from one basin to another, particularly moving credits to the Forebay Groundwater Basin. In addition, many of the listed potential water management strategies move river water or reclaimed water across basins to be used for either in-lieu deliveries that replace groundwater pumping, or for direct groundwater recharge. The fundamental concept of localized management strategies is also discussed in Section 10.1.7.

9. ***Oxnard, Camarillo, and Crestview's Comment: Specific strategy: Ag recycled water use****. The draft Plan acknowledges (assumes) that larger volumes of recycled water will be available for Ag use in the future. The assumption is correct that highly purified recycled water will be available and recycled water use could be a very efficient method of solving several regional problems. However, there is some resistance in the Ag community to take direct use of recycled water. The resistance is not over the quality of the recycled water, but over the required reporting to distributors and product buyers that the crop was grown with recycled water. As long as there is the Ag industry perception that recycled water use may harm the user's competitiveness, recycled water will not be widely accepted. The Board may be able to help influence certain industry groups to alter the current reporting requirements that create these problems for individual users.*

Response to Oxnard, Camarillo, and Crestview's Comment #9: The comment is noted.

10. ***Oxnard, Camarillo, and Crestview's Comment: Analytic Methodology.*** *There appears to be no intent to model the expected (inevitable) conversion of Ag use to M&I use over the period of the modeling run. Without this detail, the modeling exercise may provide very misleading results. For example, there are several significant Ag to M&I projects that are in the planning stages located in the south Oxnard Plain area, nearby the City's wastewater treatment plant and the military bases. The result of these conversions will be a shift in groundwater use from wells in a highly sensitive area, to City and United wells located far from the coast (and imported water). If the model does not take into account these expected transitions, it will predict a materially different future than that which will occur. In this fashion, the modeling results may be very misleading.*

Response to Oxnard, Camarillo, and Crestview's Comment #10: The groundwater modeling purposely kept land use constant through the forward model period to analyze the quantitative effect of different groundwater management strategies (such as 5% reduction of historical allocation or implementation of an injection barrier). A typical model-based quantitative analysis, including the Ventura Regional Groundwater Model (VRGM), alters only one variable at a time to determine its effect on the entire system. Often, if more than one variable is changed, (e.g., adding a management strategy plus changing land use), the quantitative effect of either variables is obscured. The effect of changing land-use was not one of the variables examined in this analysis; however, adding such a scenario would be instructive. As part of the Plan implementation process, this may be one of the recommendations to the Technical Analysis Group (TAG).

11. ***Oxnard, Camarillo, and Crestview's Comment: Water Quality.*** *It is somewhat troubling that the cornerstone of the Plan is the setting of Basin Management Objectives, some of which are water quality objectives. However, the model has no capability to predict water quality changes. Thus, we need to be very careful in how we set and monitor compliance with the Basin Management Objectives.*

Response to Oxnard, Camarillo, and Crestview's Comment #11: It is true that the groundwater model cannot directly predict water quality changes, although there is some capacity to determine the effects of seawater intrusion in coastal areas. In these areas, controlling seawater through management of groundwater elevations is a priority goal and key component of the management plan, and is addressed in Sections 9.1, 10.2.1, and 10.3.1. In other areas, the BMOs are the Regional Board's Basin Plan Groundwater Objectives Other water quality objectives and are discussed in Section 6.1, 9.2, 9.3, 10.1.3, and 10.1.4. In the Forebay basin, nitrate BMO's are set at the Department of Health Services notification level for drinking water. As part of the Plan implementation process, this may be one of the recommendations to the Technical Analysis Group (TAG).

12. Oxnard, Camarillo, and Crestview's Comment: Periodic update. *Either as a component of the Plan, or as a Board measure in adopting the Plan, there should be a built in requirement to update the Plan no less than every 5 years. This should not be so difficult if the model proves to be as useful a tool as is expected.*

Response to Oxnard, Camarillo, and Crestview's Comment #12: This recommendation for periodic reviews and updates are now a strategy and action item in the Plan and is discussed in Section 11.1.3.

13a. Oxnard, Camarillo, and Crestview's Comment: Pg. 12. There is no such thing as "in-lieu"' credits. Ordinance 8 only defines storage and conservation credits. There are special credit transfer agreements/programs the GMA has approved that amount to "in-lieu" transfer of credits, but the term has no meaning in Ordinance 8.

Response to Oxnard, Camarillo, and Crestview's Comment #13a: The reference to "In-Lieu" credits have been eliminated or corrected and the term in-lieu is only used to refer to imported, surface, or reclaimed water that could be used instead of extracted groundwater.

13b. Oxnard, Camarillo, and Crestview's Comment: *Ordinance 8 requires Ag to demonstrate 80% efficiency, based on the individual crops grown. The Plan does not propose tightening the efficiency percentage as a potential method of reducing water use. Also, the current reporting requirements are not clear in requiring that the efficiency calculation is to be based on irrigated acreage, not total owned property. In some cases, the irrigated acreage may be materially smaller than the property footprint. In that circumstance, the user gets a substantial benefit in reporting efficiency based on the property footprint instead of the irrigated acreage.*

Response to Oxnard, Camarillo, and Crestview's Comment #13b: As indicated in Section 11.2.4, an examination of the irrigation efficiency allocation will be undertaken as part of the implementation of the Plan.

13c. Oxnard, Camarillo, and Crestview's Comment: Pgs. 13, 16. *There is no mention of M&I return flows as a source of recharge.*

Response to Oxnard, Camarillo, and Crestview's Comment #13c: Return flows have been added as a nominal potential recharge source, with the caveat this only occurs in some areas. In fact, return flows can only reach the main FCGMA aquifers in a few areas where there is hydrologic continuity between surface uses and these aquifers – elsewhere, it is intercepted by impermeable layers and/or perched aquifers.

13d. Oxnard, Camarillo, and Crestview's Comment: *Two different definitions of basin yield are used and overdraft is not defined.*

Response to Oxnard, Camarillo, and Crestview's Comment #13d: Section 7.0 of the final Plan addresses the concept of Yield of Groundwater Basins, its calculation, and the associated assumptions.

13e. Oxnard, Camarillo, and Crestview's Comment*: The discussion of the decreasing trend of extractions is incomplete and therefore misleading. As to the Ag side: (1) there is no quantification of the reduction of Ag pumping resulting from reduced acreage in production over the past two decades, and (2) there is no recognition that the initial period against which we are measuring reduced usage was a very dry period. During dry periods, Ag groundwater use tends to be greatest. Since those early years, we have been in a generally wet period. Thus, we would expect a natural reduction in Ag groundwater use simply based on the historical hydrology*.

As to the M&I side, there is no quantification of the increase in municipal demand as a result of conversion of Ag use to M&I use. There is no discussion of the relative efficiencies of use of water prior to the imposition of the cutback goals. The implication of the current discussion in the Plan is that Ag has done more than its share and M&I has not. There is insufficient information or analysis for this conclusion or implication. This discussion should either be made complete and correct, or eliminated, especially if policy decisions might be influenced by it.

Response to Oxnard, Camarillo, and Crestview's Comment #13e: The language has been changed to eliminate any implication that M&I has not done its share of water conservation or planned reductions in overall groundwater extractions. An example of ag to urban conversion was also added. The discussion of reduction in pumping does not simply compare the dry years of the base period to the wet years following that period to document reductions in pumping. Instead, extraction in like years were compared (dry to dry, wet to wet), with the comparison included in the discussion of overall FCGMA annual extractions and any changes over time. Therefore, the language on FCGMA pumping reductions remains in the Plan.

13f. Oxnard, Camarillo, and Crestview's Comment: Pg.29. *The discussion of increasing salt concentrations in the Las Posas basins is somewhat conclusory and incomplete. It might help to actually provide the POTW discharge water quality for TDS and chlorides, so that it would be more clear to the reader that the problem is, in fact, generating from aquifer conditions, not discharge water quality.*

Response to Oxnard, Camarillo, and Crestview's Comment #13f: Language was added to point out that chloride concentrations of surface waters (including POTW discharges) were considerably lower than those of the affected aquifer. While it is true that the problem was not generated by the quality of the discharge water, the problem appears to have been created by the increased quantity of discharge water (POTW's plus Simi Valley Groundwater Basin dewatering and increased urban runoff throughout the watershed). The higher stream flows created by these discharges have apparently filled the shallow aquifer above historic levels, which may be dissolving salts in the previously unsaturated portion of the shallow aquifer. The Plan references a report done for Calleguas MWD for a more-detailed discussion of this water quality problem.

FCGMA responses to written comments submitted on behalf of the City of Oxnard by:
Anthony Emmert
Water Resources Manager
City of Oxnard, California

1. ***Oxnard's Comment:*** *At the last workshop on the draft Plan, the group discussed the potential that incorrect assumptions about the quantity of groundwater production could result in erroneous outcomes from the model. Indeed, there is substantial anecdotal evidence that groundwater production reporting may be materially incorrect because of inaccurate meters or other faulty reporting mechanisms. For this reason, we recommend that the model be run to assume a band of uncertainty relating to the quantity of groundwater production within FCGMA. Such sensitivity analysis will help verify the integrity of the model results.*

Response to Oxnard's Comment #1: A sensitivity analysis was added to the discussion of model results in Appendix B of the final Plan. Following implementation of the meter calibration program scheduled to begin in mid-2007, it would be prudent to revisit this issue to ensure the model is calibrated with the most accurate extraction data.

2. ***Oxnard's Comment****: As a related matter, the FCGMA will pursue an aggressive review of meter calibrations over the next several years. However, this process is not scheduled to start until 2007 and it will take three years to complete the first cycle. We recommend that the model be periodically rerun and updated with this new, more accurate production data when it becomes available. In the interim, we recommend that FCGMA staff review suspect accounts and perform a preliminary audit of groundwater production reporting to determine the scope of potential discrepancies.*

Response to Oxnard's Comment #2: Periodic reviews and updates to both the VRGM and the Plan are now a strategy and action item in the Plan (Section 11.3.1). More frequent changes or additions to the Management Plan and/or changes to the model could be performed at the Board's discretion, although additional funding may need to be obtained for such efforts.

The final Plan contains a discussion of verification of extraction reporting as a management strategy as well as a proposed procedure for verification. Verification of extraction reporting coupled with revised model inputs represents a fundamental step to enhancing the accuracy and effectiveness of the model. Both are addressed in the final Plan.
FCGMA staff has, and continues to, work diligently on an ongoing basis to identify, research, and, to the extent practical, correct extraction reporting anomalies. Fundamentally, the current system relies on the honesty, forthrightness, and diligence of individual well operators. Given that the Agency has limited resources, the FCGMA will need to continue to rely on self-monitoring reports from the operators, education efforts highlighting the need for accurate reporting, and the contributions of its member agencies to enable it to capture the most accurate data available.

3. ***Oxnard's Comment:*** *The Draft Plan sets forth several potential future management strategies that should be further explored for their potential effectiveness in addressing seawater intrusion and other adverse hydrogeologic conditions. We recommend that the next draft of the Plan prioritize these potential future strategies in terms of their potential effectiveness. We further recommend that the FCGMA develop procedure to apply a cost/benefit analysis to determine which of the prioritized strategies should be implemented.*

Response to Oxnard's Comment #3: The final Plan (October 2006) prioritizes groundwater management strategies as suggested. At the March 2007 special Groundwater

Management Plan Workshop, the FCGMA staff introduced a proposed implementation approach that involves both technical and strategic advisory groups that would work together to evaluate each of the groundwater management strategies on both a technical and a cost/benefit basis. These groups will subsequently provide recommendations to the Board.

4. ***Oxnard's Comment:*** *As a general matter, we also encourage the FCGMA to consider more dynamic use of aquifers with dewatered storage space as a potential resource for future conjunctive use programs. Other basins, such as the Chino and Orange County basins, are currently planning and using available dewatered storage space for local and regional conjunctive use programs that yield better water supply reliability and financial benefits to support other necessary basin management programs. The FCGMA could pursue similar programs. There are numerous hydrogeologic and policy matters that must be resolved to implement a large scale groundwater storage program. Still, we recommend that the Plan include additional and more detailed discussion of potential opportunities for active conjunctive use programs within the FCGMA area.*

Response to Oxnard's Comment #4: The final Plan includes several strategies that utilize existing aquifer space for storage including the Oxnard Plain Forebay Basin (Sections 9.6.6, 10.1.5, 10.2.2), the South and East Las Posas Basins (Sections 9.2, 10.1.7, and 10.1.10) and the Pleasant Valley Basin (Sections 9.3, 10.1.7, and 10.1.10) In addition, the use of recycled water for injection is discussed in Section 9.1. Ultimately, the technical and cost/benefit of each of these strategies will have to be evaluated by the advisory group(s) and recommended to the Board for implementation.

FCGMA responses to written comments submitted on behalf of Pleasant Valley County Water District (PVCWD) by:
Mr. John Mathews
Arnold, Bluel, Mathews, & Zirbel, Attorney's at Law, LLP
Oxnard, CA
Legal Counsel for Pleasant Valley County Water District
Camarillo, CA

1. ***PVCWD's Comment:*** *Under the section "Groundwater Extractions", in the third paragraph it refers to increased agricultural efficiencies. We believe that somewhere in this paragraph reference should be made to the fact that extractions from the groundwater may have also decreased because increased yields from the Freeman diversion and the Conejo Creek project.*

Response to PVCWD's Comment #1: A sentence has been added as suggested.

2. ***PVCWD's Comment****: On page 43, in the section entitled "Assessment of Basin Management Objectives", in the second paragraph it refers to Basin Management Objectives (BMO's) for groundwater levels in the Pleasant Valley basin. In table 3, it makes reference to Basin Management Objectives in the Pleasant Valley area, but does not set forth what the current levels are, it would be helpful to state the groundwater BMO's.*

Response to PVCWD's Comment #2: Current levels have been added to all the BMO tables.

3. ***PVCWD's Comment:*** *On page 48, under the Section "Contingency Plan for LAS Seawater Intrusion", it states that the GMA staff has developed a contingency plan to address the intrusion of seawater into the LAS. It would be helpful if drafts of that Contingency Plan could be made available for public review.*

Response to PVCWD's Comment #3: As stated in the final Plan (Section 8.1), no formalized Contingency Plan for LAS Seawater Intrusion exists. The original FCGMA Groundwater Management Plan completed in September 1985 contained a list of countermeasures that could be employed either temporarily or for longer periods of time to offset an extreme and threatening loss of fresh water resources. Some of the schemes listed, such as a complete ban on all future LAS wells, forced urban and farm water conservation, or monetary incentives to encourage destruction of LAS wells, have limited feasibility at the present time. Others such as implementing voluntary conservation measures, changing the County Well Ordinance to limit new LAS wells, and additional monitoring efforts either proposed in the current plan or already under development.

4. ***PVCWD's Comment****: On page 50, under the Section "Conejo Creek Diversion Project", the last sentence references that over the "net 20 years" that the yield of the diversion might decrease. There obviously is a spelling error there in that the word "net" should be "next". Furthermore, input should be sought from Camrosa Water District to determine whether or not their proposed plans will in fact reduce yield to Pleasant Valley. In discussions with Richard Hajas, it is our understanding that Camrosa's intent is to continue to provide current levels of diverted water to Pleasant Valley and in fact yields may be increased.*

Response to PVCWD's Comment #4: The typo has been corrected. The information in this Section was based on a conversation with Camrosa staff, who emphasized that yields of the Conejo Creek diversion project may not always be available to PVCWD.

5. ***PVCWD's Comment:*** *Under the Section "Great Project (Recycled Water)", the first paragraph makes reference to the delivery of recycled water to the Pleasant Valley area. PVCWD has continued to express their concerns to the City of Oxnard about the suitability of the recycled water for agricultural use. In particular, Pleasant Valley is concerned about the "stigma" that recycled water has in the market place. Many growers are now required to provide information on the source of their irrigation water. In the event that recycled water is used, the agricultural produce is often downgraded.*

   Also, Pleasant Valley has concern about the injection of recycled water into the LAS. Injection into the LAS is discussed on pages 65 and 66 (June 2006 Draft Plan). Because the LAS is the only groundwater source for the PVCWD, Pleasant Valley will closely scrutinize any injection of recycled water into the LAS. We feel that a better alternative to injection would be the transportation of the recycled water to the spreading grounds. This would enhance recharge and remove concerns relative to injection.

Response to PVCWD's Comment #5: The use of reclaimed water, as well as most or all of the proposed strategies will need to be analyzed for both technical feasibility and cost/benefit considerations prior to implementation. At that time, the proposed alternative, as well as other alternatives, will be considered. Indeed, the purpose of the advisory groups proposed by the FCGMA Staff at the March 2007 Special Groundwater Management Plan Workshop is to evaluate both the Plan-proposed and alternative groundwater management strategies.

With respect to the specifics of your proposal, the alternative to injection suggested above has two major drawbacks:

1) Reclaimed water recharged in the spreading grounds is not as quantitatively effective or efficient in recharging the Lower Aquifer on a unit for unit basis as using the water in place of extracted groundwater or injecting water directly into the areas with lowered groundwater levels; specifically, the south Oxnard Plain and Pleasant Valley basins; and

2) Reclaimed water delivered via pipeline to the spreading grounds would trigger a host of California Department of Health Services (DHS) requirements, including a zone surrounding the spreading grounds where no groundwater could be pumped for potable use. The DHS requirements for the spreading grounds with piped reclaimed water could significantly alter United Water's operations of the spreading grounds. Any directly injected recycled water would be subject to existing or future DHS stringent water quality standards for domestic consumption, which are very stringent.

6. ***PVCWD's Comment****: Under the Section "Non-Export of FCGMA Water", the last paragraph on that page states "It appears that current ordinances and policies of the FCGMA are sufficient to deal with its export issue." In light of recent issues, the ordinances of the GMA should be reviewed again to make sure that they are adequate to address the export issues. In particular, the enforcement provisions relating to export of "GMA" water should be closely reviewed.*

Response to PVCWD's Comment #6: A discussion about reviewing the sufficiency of current ordinances and policies was added to the Plan in Section 10.1.8.

7. ***PVCWD's Comment****: Under the Section "Increase Diversions from Santa Clara River, Potential Effectiveness". the first sentence states "The Santa Clara River remains a primary recharge source for the Oxnard Plain and Pleasant Valley basins." Based upon our understandings of various studies, it is a little misleading to suggest that the Pleasant Valley*

basin gets much recharge from the Santa Clara River. Although there may be some recharge, even that is disputed, it is clear that the amount of recharge is minimal at best.

Response to PVCWD's Comment #7: PVCWD's comment has merit and the corresponding text has been amended to indicate there is some uncertainty with regards to the quantitative contribution of the Santa Clara River to the southern portion of the Oxnard Plain Pressure Basin and the Pleasant Valley Basin. However, the Santa Clara River likely provides significant recharge to the northern Oxnard Plain Pressure Basin. It is probably not accurate to portray the recharge going to Pleasant Valley from the Santa Clara River as "minimal at best." Although recharge to this basin is hampered by the zone of lower conductivity (fault?) that separates it from the Santa Clara River, there is still recharge moving across the zone. The river also alleviates the need for some recharge through the pipeline delivery of surface water as a replacement for extracted groundwater.

***8. PVCWD's Comment**: Under the section "Shelf Life for Conservation Credits", it is Pleasant Valley's opinion that at the present time there is no need for "sunsetting" of conservation credits. While conservation credits have been built up by not only Pleasant Valley, but other entities, it was the very purpose of allowing for conservation credits so that the credits could be retained and used for future needs. Pleasant Valley sees no present need to "sunset" the conservation credits. Credits would only be used when there was inadequate surface water from the Freeman Diversion and the Conejo Creek Project, and pumping from our wells were insufficient to meet our needs. Putting a shelf life on credits seems to suggest that Pleasant Valley would utilize their credits to over-pump and waste water.*
It is also our opinion that putting a shelf life on credits, will also remove incentives to look for creative water solutions. For example, much of the impetus for Pleasant Valley to participate in the Conejo Creek Project, was the fact that credits would be generated.

Response to PVCWD's Comment #8: Your comments are noted. Currently, there are no restrictions on the use of conservation credits, thus there is significant potential for over-use of the groundwater resource through the conservation credit program. The "sunsetting proposal" has been one of several proposals advanced by FCGMA stakeholders to mitigate the potentially negative consequences of the current credit program. Ultimately, current program will need to be evaluated in the context of the groundwater conditions and other groundwater management strategies to determine its potential benefit/consequences.

FCGMA responses to written comments submitted on behalf of Saticoy Country Club (SCC) by:
Mr. John Powell, Water Committee Representative
Saticoy Country Club

1. ***SCC's Comment:** Continuation of 25% Pumping Reduction. SCC supports all efforts to bring the basins into safe yield and we not only have committed to reduce our overall pumping but we also have committed significant capital resources to increase our efficiencies. As briefly described above we have made a significant efficiency effort already through our infrastructure alterations and water management practices and will continue that effort in the future. As such it is our opinion that to continue the phased reductions to the full 25% reduction (with possible further reductions) only to M&I users is unfair and that the Draft Management Plan Update should either include provisions to reward increases in efficiencies by M&I users and/or to implement additional productive measures to also reduce agricultural pumping. Agricultural users consume far more of the resource and it is completely unfair to place the burden of balancing the basin on the M&I users.*

Response to SCC's Comment #1: Your comments and continuing conservation efforts are very much appreciated. As a point of clarification, the proposed further reductions in groundwater extraction under historical allocation are **not** limited to M & I Operators as suggested by your comment. Other extraction reduction strategies included in the final Plan include a change to the Irrigation Efficiency Calculation (Section 10.1.9) and Additional Water Conservation strategies (Section 10.1.12). A generic discussion of M&I and agricultural conservation efforts has been added the final Plan (Section 4.0).
One of the somewhat surprising conclusions that resulted from the many computer modeling scenarios was that implementation of the remaining two 5% scheduled reductions in Historical Allocations would not eliminate the overuse of groundwater resources within the FCGMA. Thus, reduction of allocation will have to be considered in conjunction with other groundwater management strategies. Ultimately, the responsibility for efficient and effective groundwater use falls on all of the FCGMA stakeholders.

2. ***SCC's Comment: Shelf Life for Conservation Credits.** We understand the potential concerns of accumulating Conservation Credits with no expiration date and that this accumulation effectively has left a large theoretical pumping debt on the aquifers. Sunset provisions may be warranted in many cases. Our initial concerns with this proposed provision alteration is how it may impact different size users and also the potential for removal of credits earned through our continued efficiency improvements.*

Response to SCC's Comment #2: As noted in a response to similar comments, there are no restrictions on the use of conservation credits, thus there is significant potential for over-use of the groundwater resource through the conservation credit program. The "sunsetting proposal" has been one of several proposals advanced by FCGMA stakeholders to mitigate the potentially negative consequences of the current credit program. As part of the implementation of the Plan, both the quantitative contribution and cost/benefit of all groundwater management strategies will be evaluated as part of the development process.

FCGMA responses to written comments submitted on behalf of the City of Camarillo (Camarillo) by:

Ms. Lucia McGovern, Deputy Public Works Director
City of Camarillo

1. ***Camarillo's Comment:*** *Page 58* (of the June 2006 Draft Plan Draft Plan) *indicates the following, "the City of Camarillo is considering a strategy to move some of its current pumping from the area of the LAS pumping depression beneath Pleasant Valley to this area of poorer-quality rising groundwater. Under this plan, the poorer-quality water would be extracted and desalted in a similar manner to the South Las Posas Basin project approved by the FCGMA."*

   Recommended Action: Consider replacing this text with the following, "The City of Camarillo has assessed the feasibility of constructing a Groundwater Treatment Facility that would be located in the Somis Gap area of the Pleasant Valley Basin (Black & Veatch, August 2005). The study determined the project to be technically feasible and would allow Camarillo to halt pumping from an area of the LAS with depressed groundwater levels and instead pump in an area of rising groundwater levels. This plan is similar in nature to the South Las Posas Basin project, which was previously approved by the FCGMA Board and consistent with policy to move pumping to areas of known substantial recharge (i.e., Oxnard Forebay) which will create more storage space for future recharge events. The City of Camarillo proposes to coordinate pumping strategies between various stakeholders in the neighboring sub-basins in order maintain replenishment of the Pleasant Valley Basin."

Response to Camarillo's Comment #1: Some of this language has been added to the final Plan. Parenthetically, moving pumping away from Camarillo's airport wells has been simulated using the Ventura Regional Groundwater Model, with results discussed in Appendix B of the revised report and included in the discussion of this particular management strategy.

As a point of clarification, the Board **has not**, in fact, approved any plan for pumping without allocation in the South Las Posas Basin, although the Board has addressed the potential for consideration of such a plan. Specifically, Resolution 2003-03 states that "an allocation for pumping from the South Las Posas Basin may be changed or altered to accommodate a responsible entity that submits **a plan** to render this groundwater usable"[*] To date, no specific plan has been approved through ordinance or resolution by the Board.

2. ***Camarillo's Comment****: The majority of the discussion on page 58 focuses on the development of brackish groundwater in the LAS of the Pleasant Valley Basin by means of Camarillo's Groundwater Treatment Facility project. However, the third paragraph awkwardly mixes in a brief discussion of an alternate subject in an area of the Pleasant Valley Basin that is far away from the observed recharge in the Forebay.*

   Recommended Action: Please elaborate on the significance of this paragraph to Camarillo's Groundwater Treatment Facility Project or relocate this paragraph to an alternate location to maintain the continuity of the discussion regarding Camarillo's Groundwater Treatment Facility project which is in the Forebay.

[*] FCGMA, 2003. Item 4: Minutes of the October 22, 2003 Board Meeting *in: Full Agenda for the December 17, 2003 FCGMA Board Meeting.*

Response to Camarillo's Comment #2: The paragraph has been revised to reflect this comment, however we cannot agree with Camarillo's use of the term "Forebay" when discussing a possible unconfined area near the town of Somis at the northeastern corner of the Pleasant Valley Basin. There is at present, no comprehensive and conclusive evidence to support the concept that this area acts like a "Forebay" from a hydrogeologic standpoint. Further, the use of this term could be misleading when used in context with the rest of the FCGMA Management Plan where "Forebay" refers to the Oxnard Plain Forebay Groundwater Basin adjacent to the northern end of the Oxnard Plain Pressure Groundwater Basin.

3. ***Camarillo's Comment:*** *Page 17 (June 2006 Draft Plan) provides the following description of the Pleasant Valley Basin, "Despite the fault barrier to the west, the LAS is in hydrologic continuity with the adjacent southern portion of the Oxnard Plain Basin, which is the primary recharge source for the Pleasant Valley Basin."*
   Two paragraphs later, the following is stated, "At the northeast edge of the Pleasant Valley basin, where Arroyo Las Posas flows cross the basin boundary, increased flows in the arroyo have apparently percolated directly into the LAS, significantly raising groundwater levels in City of Camarillo wells. This recharge suggests that this portion of the Pleasant Valley Basin is unconfined, contrary to current understanding of the basin. "
   Recommended Action: Consider the following definition of the Pleasant Valley Basin and explanation of recharge sources for this basin:
   Historically it was assumed that the LAS of the Pleasant Valley Basin was relatively confined and received little overall recharge. This assumption was based on the understanding that the primary recharge source for this basin was from the adjacent Oxnard Plain Basin to the south and recharge potential between these basins was low due to the low permeability of the Pleasant Valley Basin aquifer in this region, as well as the presence of a fault barrier in the lower portions of the Oxnard Plain. However, since the early 1990s, water levels have begun to rise in the northern adjacent basins. The City of Camarillo has two existing wells in .the northeast portion of the Pleasant Valley Basin (hereafter called the Somis Area) and these wells confirm that rising water levels in northern adjacent basins directly impact recharge rates, water quality, and water levels in the Somis Area.
   The recharge in the Somis Area (Pleasant Valley Forebay) may be a result of the Saugus Formation being folded upward and subsequently eroding away in the Somis gap area covering the underlying bedrock with a predominantly sandy alluvial layer that allows rapid stream flow percolation. If this theory is correct, it is also likely true that the primary source of recharge for the Pleasant Valley Basin prior to the decline of the water levels in the adjacent northern basins was a forebay in the Pleasant Valley Basin and this primary recharge source is again prevalent due to the recent rise in water levels in the northern basins. It is recommended that additional monitoring and studies be conducted to determine if this theory is correct."
   Figure 1 illustrates the conceptual location of the Pleasant Valley Forebay.

Response to Camarillo's Comment #3: Much of this suggested language has been included in the final Plan (Section 3.0). Section 3.0 significantly revises the text to indicate the degree of uncertainty in this area with respect recharge and hydrogeology. There is agreement that the northern portion of the Pleasant Valley basin south of Somis needs to be better understood and there is significant recharge occurring in this area of the basin. The details of how this recharge impacts the main portion of the Pleasant Valley basin needs further evaluation, with the result of the study integrated into the conceptual geology of the Ventura Regional Groundwater Model.

The term "Pleasant Valley Forebay" is not used for the reasons cited in the response to the previous Camarillo's Comment #2.

4. ***Camarillo's Comment****: Page 58 (June 2006 Draft Plan) indicates the following, "Base flow from the Arroyo Las Posas has migrated completely across the South and East Las Posas Basins and into the northernmost Pleasant Valley Basin, providing a source of new recharge to this portion of the Pleasant Valley Basin. Coordination in pumping strategies between the sub-basins is recommended in order to avoid negatively impacting groundwater levels in the Fox Canyon Groundwater Basin." As stated in Camarillo's Comment #3, this may not be a "new" source of recharge but instead reestablishing of an old source of recharge to the Pleasant Valley Basin.*
   Recommended Action: Consider revising the text to indicate that the Somis Gap was potentially the primary recharge source for the Pleasant Valley Basin prior to pumping activities in the northern adjacent basins.

Response to Camarillo's Comment #4: See our response to Camarillo's Comment #3 above. Section 3.0 significantly revises the text to indicate the degree of uncertainty in this area with respect recharge and hydrogeology.

5. ***Camarillo's Comment:*** *The Draft GMP does not segregate the Pleasant Valley Basin into sub-basins, it only describes the basin as a whole. Furthermore, the last sentence of the second paragraph of page 17 (June 2006 Draft Plan) indicates a lack of current understanding of this basin.*
   Recommended Action: Please elaborate on the current understanding of the Pleasant Valley Basin and clarify how the basin is currently handled in the model. It is also recommended that the authors consider sub-dividing the Pleasant Valley Basin into sub-basins (Pleasant Valley Forebay and Pleasant Valley Basin) to assist in evaluating the different potential recharge sources for the basin.

Response to Camarillo's Comment #5: See responses to the previous two Camarillo's Comments.

6. ***Camarillo's Comment****: The second paragraph on page 33 (June 2006 Draft Plan) indicates groundwater levels in the LAS have consistently been below sea level in the Pleasant Valley Basin. This is not true across the entire basin.*
   Recommended Action: Clarify that water levels in the southern portion of Pleasant Valley Basin have historically been below sea level since the 1950's. However, water levels in the northeastern portion of the basin near the Somis gap have historically been above sea level and continue to rise along with levels in the adjacent northern basins.

Response to Camarillo's Comment #6: The text has been amended appropriately in the final Plan.

7. ***Camarillo's Comment****: The last sentence of the second paragraph on page 29 (June 2006 Draft Plan) states that: "It is too early to know whether chlorides in the Pleasant Valley Basin will escalate to a problem affecting local pumpers." This sentence is restated in the third sentence of the second paragraph on page 35. In both places it should be noted that two City of Camarillo wells (Wells A and B) have already been impacted by a rise in chlorides, which has prompted the City to discontinue use of Well A and to blend water from Well B with higher quality imported water to meet drinking water standards.*
   Recommended Action: Revise the referenced sentences to indicate that chloride levels in the southern portion of the basin have risen marginally from rising water levels, but due to limited data, the marginal rise of chloride levels could be much higher. However, as shown on Figure 14 of the draft GMP, sulfate and TDS levels in the northern portion of the Pleasant Valley Basin have been rising steadily and have already exceeded secondary drinking water standards. Available data also indicate that concentrations of iron and manganese are also

rising in response to basin recharge and have risen to levels that impair M&I uses.

Response to Camarillo's Comment #7: The text has been amended appropriately in the final Plan.

8. ***Camarillo's Comment****: Page 35 (June 2006 Draft Plan) provides discussion on increasing sulfate and chloride levels in the northern Pleasant Valley Basin and indicates water treatment will be needed for potable or irrigation use.*
   Recommended Action: Consider expanding the discussion to include the following text: "Camarillo has evaluated the feasibility of constructing a Groundwater Treatment Facility that would intercept a portion of the poorer water quality surge and remove salts from the aquifer system. This would help protect the water quality in the southern portion of the basin and preserve higher quality water for use by other pumpers in areas of major overdraft. Furthermore, by utilizing the water from the Groundwater Treatment Facility, Camarillo could curtail or eliminate pumping operations in the southern portion of the Pleasant Valley Basin, which would promote recovery of the depressed water table in that region. Further details of the project are provided in the Section titled, Development of Brackish Groundwater, Pleasant Valley Basin."

Response to Camarillo's Comment #8: Appropriate language has been added to Section 5.2.3 and Section 9.3 of the final Plan. Based on the data and analyses available at this time, it is not known whether a groundwater treatment facility in the northern half of the Pleasant Valley basin would necessarily help to protect water quality in the southern portion of the basin. There is also significant potential for increased pumping associated with a treatment facility to worsen water quality in the southern portion of the Pleasant Valley Basin. Given that there is limited study and data on the area and no quantitative analysis regarding such a system, any statements regarding its success or failure are speculative.

9. ***Camarillo's Comment****: The second sentence of the last paragraph on page 43 (June 2006 Draft Plan) indicates, "Basin Management Objectives (BMO's) for chloride concentrations in the Pleasant Valley Basin are currently being met, although chlorides are rising slowly in a few wells in the basin."*
   There are a number of wells that indicate that the BMO's are not being met. For example, County data indicate that well 01N/21W-01B04 screened from 820 to 1,150 feet has chloride greater than 200 mg/l, well 01N/21W-03C01 is screened from 956 to 1,216 feet has chloride greater than 260 mg/l, and well 01N/21W-01D02 is screened from 107 to 437 feet with chloride greater than 450 mg/l.
   Recommended Action: Consider revising the statement to indicate that BMO's are not currently being met throughout the entire Pleasant Valley Basin.

Response to Camarillo's Comment #9: The text has been amended appropriately in Section 6.2 of the final Plan.

10. ***Camarillo's Comment****: The first sentence of the last paragraph on page 58·(June 2006 Draft Plan) indicates, "Under current FCGMA policy, City of Camarillo pumping of poor-quality groundwater along Calleguas Creek would have to be pumped using existing allocations if the well was within the FCGMA boundary." The City of Camarillo understands that current FCGMA policy has evolved over time and has previously allowed unrestricted pumping of poorer quality shallow groundwater, with the semi-perched zone in the Oxnard Plain and the South Las Posas along the Arroyo being two examples.*
    Recommended Action: .Consider revising the last paragraph of page 58·(June 2006 Draft Plan) to say: "Previously, City of Camarillo pumping of poor-quality groundwater along Calleguas Creek would have to be pumped using existing allocations since the wells are within the FCGMA boundary. However, as FCGMA policy has evolved over time,

unrestricted pumping of poorer quality shallow groundwater has been allowed. For the Camarillo Project, a coordinated effort between the FCGMA and City of Camarillo should be undertaken to define the potential benefits of operating the City of Camarillo Groundwater Treatment Facility. Extractions of poor-quality water without allocations are discussed in more detail in the Section titled "Recommended Additions to FCGMA Policies."

Response to Camarillo's Comment #10: This comment is addressed in Section 9.3 of the final Plan. A formal written policy that includes criteria for these types of projects is recommended as an addition to FCGMA policies.

With regard to other as aspects of this comment, there are two points of clarification. First, no actual pumping of poor-quality shallow groundwater has been authorizes by the FCGMA to date without an existing allocation. Resolution No. 98-1 provides for construction dewatering without an established allocation since such work is typically short-lived and occurs in the shallow subsurface. Resolution No. 99-3 allowed for unrestricted pumping of "mounded groundwater" within the Oxnard Plain Forebay Basin without an allocation, but only under very specific terms and conditions that to date, have never been met or authorized. Second, the Board **has not**, in fact, approved any plan for pumping without allocation in the South Las Posas Basin although the Board is willing to consider the submittal of a plan. Specifically, Resolution No 2003-03 states that "an allocation for pumping from the South Las Posas Basin may be changed or altered to accommodate a responsible entity that submits a plan to render this groundwater usable"[*] To date, no specific plan has been approved through ordinance or resolution by the Board.

***11. Camarillo's Comment**: The last 3 paragraphs on page 23 (June 2006 Draft Plan) discuss groundwater extraction reduction. The numbers presented in the second paragraph in this Section indicates that the total reduction in pumping is about 22 to 23 percent. The next paragraph indicates that the largest decrease in pumping is from agricultural uses, while the last paragraph indicates that the first phase of the FCGMA enforced pumping reductions of 15 percent resulted in the reduction of 8,300 acre-feet of pumping by the M&I users. However, the discussion on the reduced pumping does not appear to reflect the transfer of allocation from agricultural uses to M&I service, or the fact that while some M&I providers are using all their allocation, others have been conserving them for conjunctive use with other sources. We believe that the apparent 15 percent reduction in pumping is somewhat coincidental and that the overall M&I allocation for groundwater use has increased substantially due to land use conversion.*

Recommended Action: This discussion should compare the changes in acreage irrigated and M&I acreage served over the same time period that pumping reduction has occurred. This may also be the place to discuss the likelihood that under recording meters, or agricultural wells with no meters at all, may be contributing to the apparent reduction in reported agricultural pumping.

Response to Camarillo's Comment #11: The discussion of groundwater extraction has been expanded significantly and is located in Section 4.0 of the final Plan. The issue of potential under-reporting of groundwater extractions is addressed in Section 10.1.6 and Section 11.3.9 of the final Plan. In addition, an additional modeling scenario was performed to address potential under-reporting of groundwater extractions. A discussion of the results is provided in Section A.2.2.2 of Appendix B.

[*] FCGMA, 2003. Item 4: Minutes of the October 22, 2003 Board Meeting *in: Full Agenda for the December 17, 2003 FCGMA Board Meeting.*

***12. Camarillo's Comment**: The second paragraph of page 52 (June 2006 Draft Plan) implies that there is a universal acceptance of the pumping reductions and the stiff penalty for over pumping. The City of Camarillo doesn't agree that there is a universal acceptance of the pumping reductions. It is the City's view, as well as other M&I users, that the reduction is not equitable and recommends that the efficiency policy be reviewed in conjunction with production meter testing activities.*

Recommended Action: Consider revising the text to indicate there may be general acceptance of the pumping reduction policies but not universal agreement. The reduction policies should consider equal distribution in sharing the burden in resolving water level deficits in the basins.

Response to Camarillo's Comment #12: The language has been revised to reflect general, but not universal, acceptance of mandated or scheduled Historical allocation reductions.

***13. Camarillo's Comment**: The third paragraph on page 59 (June 2006 Draft Plan) states that the baseline allocation is two acre-feet per acre. The City of Camarillo understands that the two acre-feet per acre may have been the historical allocation, not the baseline allocation. Baseline allocation is only one acre-foot of water per acre, and should be considered when analyzing the baseline allocation policies.*

Response to Camarillo's Comment #13: The baseline allocation number as stated has been corrected to one acre-foot per acre as provided by Section 5.6.1.1 of FCGMA Ordinance No. 8.1.

***14. Camarillo's Comment:** Page 63 (June 2006 Draft Plan) provides a discussion on the potential effectiveness of importing additional state water. Further clarification of this paragraph would be very helpful in understanding this potential strategy.*

Response to Camarillo's Comment #14: A discussion of the potential effectiveness of importing California State Water is provided in Section 10.2.2 of the final Plan. The potential effects of importing California State Water was also addressed as a model scenario using the VRGM and is discussed in Section A.2.2.7 of Appendix B.

***15. Camarillo's Comment:** Page 73 (June 2006 Draft Plan) provides a discussion on penalties used to purchase replacement water. It should be noted that a large percentage of overpumping is by agricultural users who have the ability to escape penalties by switching to irrigation efficiency and consequently the revenue from these fees has historically been very little. Therefore, using this revenue to purchase replenishment water may be of little benefit to the basins.*

Response to Camarillo's Comment #15: The comment is noted.

***16. Camarillo's Comment:** Page 79 (June 2006 Draft Plan) includes a Section on "Extractions of Poor-Quality Water Without an Allocation", which would be an addition to current FCGMA policy. The City of Camarillo supports such a strategy that allows projects that would benefit the overall aquifer system. The City of Camarillo would like to see this policy implemented and would appreciate the opportunity to review the draft policy.*

Response to Camarillo's Comment #16: Please see the response to Camarillo's Comment #10 above.

***17. Camarillo's Comment:** FCGMA has reduced pumping and approved projects that provide some benefit to some portion of aquifers within the agency boundaries. However, this does not promote the implementation of projects in critical areas of the basin that are just outside of agency boundaries. Before implementing the next stage of pumping reductions on M&I users, the City of Camarillo recommends that the FCGMA evaluate larger picture projects*

that could help solve groundwater impacts in the most critical areas and potentially provide solutions in-lieu of additional pumping reductions. Further pumping reductions could possibly be avoided if the current basin by basin management approach was revised and strategies were implemented based on the principal that downstream basins are impacted by upstream uses and that the impact is therefore created by both agricultural and M&I users who pump from all basins.

FCGMA could consider implementing a "mitigation fee" of approximately $10/AF that would be paid by all groundwater users in the FCGMA. This strategy would allow funding for agencies like UWCD, Oxnard, or Calleguas MWD to develop projects that would effectively improve the conditions of the basins as a whole by moving water to over pumped areas within FCGMA boundaries. This approach would help prevent basin by basin management which could inordinately impact users in downstream basins, like the City of Camarillo.

Response to Camarillo's Comment #17: Section 11.1 of the final Plan proposes that there be a dialog on strategic planning within the water community that would discuss specific projects and project proposals. FCGMA staff has proposed a Plan implementation strategy that not only provides for, but encourages, significant stakeholder contribution and input. There are some inherent limitations to the influence of the FCGMA. The enabling legislation for the FCGMA limits its ability to influence projects and conditions outside its boundary. The opportunity to expend FCGMA funds outside its boundary is also limited.

18. Camarillo's Comment: *The City of Camarillo is under the impression that there is a quantifiable amount of groundwater being exported outside the FCGMA boundary from Pleasant Valley and Las Posas Basins. The City of Camarillo would recommend that FCGMA pursue controlling the exportation of groundwater before additional pumping reductions are approved.*

Response to Camarillo's Comment #18: The exportation of groundwater outside the FCGMA boundary is addressed in Section 9.4.

19. Camarillo's Comment: *The Draft GMP indicates that FCGMA is considering expiring accumulated groundwater credits. It should be noted that M&I users conjunctively balance surface water and imported supplies with local groundwater thereby conserving groundwater for use when surface and imported supply is not available. Therefore, setting a time limit on credits works against this water supply management philosophy. Credit reduction is an issue that should be reviewed separately for M&I uses and agricultural uses. Similar to implementing 25 percent pumping reductions, credit reductions would only impact M&I agencies who conduct long-term planning, since agricultural users could go on efficiency allocation and would not be impacted by a loss of credits. M&I users do not have this option.*

In regards to agricultural credits, please note that UWCD surface water deliveries have in part allowed accumulation of credits by agricultural users that receive surface water for irrigation. Those who funded the Freeman Diversion have in part funded the accumulation of these credits when surface deliveries were annually increased. The credit reduction strategy is believed to be of very little benefit to the overall basins but would have a significant impact to M&I users. If there is a desire to eliminate the perceived "groundwater debt", agricultural credit reduction should be the first consideration.

Pages 71 and 72 (June 2006 Draft Plan) state that there are tens of thousands of acre-feet of accrued conservation credits. The credits that the City of Camarillo has accrued came at a high cost, when we purchase more expensive imported water. Poor quality groundwater has forced the City of Camarillo to blend groundwater with imported supplies, subsequently accruing groundwater credits. The City of Camarillo intends to retain its credits until such time they are needed to meet demands during a drought. Even though credits cannot be

sold, they have a value to M&I users that is equal to the over pumping surcharge. FCGMA should reconsider the proposed strategy of expiring/reducing M&I groundwater credits.

Response to Camarillo's Comment #19: The issue of M&I accrual of credits as well as the "shelf-life" for conservations credits is discussed in extensive detail in Section 10.1.13 of the final Plan.

20. Camarillo's Comment: *Page 73 discusses proper filling and capping of abandoned or leaking wells and states that FCGMA helps with the costs associated with well abandonment. The owner of the land that the well is on should be responsible for costs associated with destruction of well(s).*

Response to Camarillo's Comment #20: It is true the owner of the land is responsible for well destruction. Historically, the City of Oxnard, United Water, and the FCGMA have each provided funding to destroy wells for a variety of reasons including urgency, difficult access, threats to water supply, and inability to find former owners. The Ventura County Watershed Protection District - Groundwater Section has pursued the destruction of 40 to 50 abandoned wells per year over the last several years at the property owner's expense without FCGMA financial assistance.

21. Camarillo's Comment*: Page 75 (June 2006 Draft Plan) provides a discussion of additional reductions in pumping allocations. It is recommended that further reductions not be implemented until after the meter testing effort is complete. Perhaps FCGMA should require an initial testing of all meters within one year. This would be very beneficial to the modeling effort because the model will only be as accurate as the information used to develop it.*

Response to Camarillo's Comment #21: The groundwater management strategy of reducing extraction allocations is discussed in extensive detail in Sections 9.5, 10.4.1, 11.2.1, 11.3.10, and Appendix Section A.2.2.3 of the final Plan. The verification of extraction reporting is discussed in detail in Sections, 10.1.6, 11.3.9, and in Appendix Section A.2.2.2. Many different and independent analyses performed over the last four years as well as years of historic documentation demonstrate nearly all of the aquifers of the FCGMA are in a state of overdraft. Two FCGMA Staff reports prepared since October 2006, the *FCGMA 2005 Annual Report*, the output of the VRGM (Appendix B to the final Plan), and the UWCD's *2003 Coastal Saline Intrusion Report, Oxnard Plain Ventura County, California* universally identify extraction of groundwater beyond a level the resource can support as the sole reason for depressed groundwater elevations, seawater intrusion, and water quality degradation throughout the FCGMA. Thus, there is an urgent need to implement strategies that both limit use of the resource and provide additional sources of acceptable recharge. While the increased accuracy of extraction reporting may indirectly contribute to better management of the groundwater resource, the overwhelming body of data and analysis supports the conclusion the resource as whole is over-allocated and overused. Delaying the implementation of any strategy that either reduces overuse of the resource or limits the acquisition of additional recharge does not serve either the FCGMA or its stakeholders. Nevertheless, further extraction reduction will be considered in conjunction with other management strategies described in the Plan with the overarching purpose of comprehensively managing the groundwater resource.

FCGMA responses to written comments provided by:
Mr. Lawrence (Larry) Fuller
Land Owner/Well Operator in the FCGMA
Somis, CA

1. ***Fuller's Comment:*** *Examining the FCGMA Management Plan in light of the case CITY OF BARSTOW et al, v. MOJAVE WATER AGENCY (21 August 2000), I believe this case clarifies the California Supreme Court's position on water rights. It is my understanding that the FCGMA used the "equitable" (physical) concept for allocation pumping to all of the Fox Canyon aquifer pumpers. This method of allocation is clearly a violation of the law, if I understand the ruling cited above. The three levels of priority, as stated in the case law, are 1st priority Overlying Owners, 2nd in priority are Appropriators, and 3rd are Exporters. Thus, while the rights of all overlying owners in a groundwater basin are correlative, and subject to cutbacks when the basin is overdrafted, overlying rights are superior to appropriative rights. It is my request that the FCGMA Board of Directors NOT make any further pumping reductions until these legal issues can be resolved. Small water users, Co-ops, and small M&I agricultural systems are not addressed specifically in the Management Plan. In addition, the FCGMA Board has no small operation representative to ensure that their interests and concerns will be heard.*

Response to Fuller's Comment #1: The history and responsibilities of the FCGMA are summarized in Section 2.0 of the final Plan.

The Agency was created by the State Legislature in 1982 [AB 2995] and granted with certain powers and authority to manage groundwater resources. Included in its enabling legislation (now codified as California Water Code Appendix Chapter 121) is the directive to develop, adopt, and implement a plan to control groundwater extractions (Sect 601). It was also granted the power to "Control extractions by regulating, limiting, or suspending extractions form extraction facilities…" [Ch. 121 Sect. 701 (b)]; and the power to "Impose reasonable operating regulations on extraction facilities…"[Ch. 121 Sect. 701(c)]. SB 747 (1991) amended AB 2995 and authorized the FCGMA Board to establish extraction allocations and levy charges for groundwater extraction. Neither the final Plan nor the FCGMA Ordinance No. 8.1 address the issue of water rights, which is beyond the scope of the FCGMA.

The final Plan was prepared to address the future management of the groundwater resource with respect to the needs of all of the FCGMA stakeholders, regardless of size. Since the operational impacts of larger users have a greater impact on the common resource, some priority has necessarily been placed on strategies that effect large-scale extraction or recharge operations. However, almost all of the proposed groundwater management strategies either directly or indirectly affect all users.

With respect to the comment regarding representation, two of the five FCGMA Board positions are established to represent agricultural operators and small water districts.

2. ***Fuller's Comment:*** *According to my understanding, the Calleguas Municipal Water District (CMWD) has been allowed to acquire Fox Canyon aquifer prescriptive pumping rights. The Board has already allowed the injection wells to be drilled and injection of imported water is progressing. It is imperative that CMWD be restricted in writing that they will not be allowed to extract water outside of their injection field.*

Response to Fuller's Comment #2: A discussion of the Las Posas Basin ASR project as well as other proposed aquifer storage projects, a preliminary set of proposed conditions is provided in Section 9.1 and Section 10.1.10 of the final Plan. Specific aspects of the East Las Posas Basin ASR (formerly Identified as the North Las Posas Basin ASR) are provided in Appendix Section A.3.1 of the final Plan.

The FCGMA has no authority in either its enabling legislation or through its Ordinance code to grant prescriptive rights. When the FCGMA Board authorized and approved the East Las Posas Aquifer Storage and Recovery Project (or ASR Program) proposed by CMWD back in February 1994, certain restrictions were placed on both the operational limitations and the water quality alterations that could result. A written list of conditions was attached to the general injection permit authorized by the FCGMA that included but were not limited to volume reporting, monthly water quality reports, water quality restrictions for both imported water and extracted water, total storage limitations, vicinity groundwater conditions reporting requirements, as well as other standards and condition-dependent response actions (Appendix Section A.3.1 of the final Plan). A copy of these standards or conditions is available and included in an official policy sheet entitled "GMA Adoption of Water Quality Standards."

3. ***Fuller's Comment:*** *A gallon for gallon or acre-foot for acre-foot of water injected for water extracted allowance associated with the CMWD ASR field should take into account the wetting factor of the dry sands and the drift factor of the water moving through the aquifer. Fluid losses can be substantial due to wetting of a dry formation and losses via underflow out of the basin or injection area. The FCGMA should not be providing free water to CMWD.*

Response to Fuller's Comment #3: The comment regarding the equity of credits for injected water compared to extracted water is addressed in Section 9.1 and Section 10.1.10 of the final Plan. This is one of the many issues to be considered as part of implementation of all FCGMA groundwater management strategies.

4. ***Fuller's Comment:*** *The court cases cited should be discussed in detail and rights of prescription should be examined as they might apply or effect FCGMA ordinances, processes or procedures especially in light of recent rulings by the court.*

Response to Fuller's Comment #4: The Agency Counsel, supplied to the FCGMA under contract with the County of Ventura, reviews and provides legal counsel to the Staff and the Board for all decisions, Ordinances, and resolutions with respect to County, State, and Federal Codes. Historically, the Agency has also contracted external legal services to provide advice on both policy and legal issues.

Folder: GMP

Comments Received

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June 22, 2006

Via Electronic Mail

Fox Canyon Groundwater Management Agency
c/o Dr. Steve Bachman
800 South Victoria Avenue, L#1600
Ventura, CA 93009

Re: Comments on Draft Groundwater Management Plan

Dear Steve:

These comments are provided on behalf of the cities of Oxnard and Camarillo, and Crestview Mutual Water Company. Many members of the GMA's M&I Providers Group have also reviewed these comments, but given the short time available, this letter has not been endorsed by any entities other than those listed above.

The M&I Providers group is committed to working with all the interested parties in ensuring that the final, updated GMA Groundwater Management Plan is well-done. The product must be comprehensive, technically well-grounded, and accessible to all the various GMA constituents. This is not a simple task.

GMA staff is also aware that the M&I Provider's Group has hired Curtis Hopkins to provide a peer review of the Management Plan. Curtis and Steve Bachman have already discussed ways in which they might collaborate in making the product meet all our expectations.

The first rough draft presented on June 12, 2006, provides an excellent starting point. Given that this initial draft does not contain the results of the modeling work, these comments are purposely general. When the modeling effort yields results, and the Management Plan is then crafted with more specific recommendations, more specific comments will be provided.

The M&I Providers Group also wanted to express its appreciation for the first workshop conducted on June 15, 2006. It is clear that Steve and the GMA staff have a good plan to ensure that the GMA constituents who chose to be involved will have ample opportunity to influence the content of the plan.

In no particular order of importance, please consider the following observations and comments regarding the first draft of the Management Plan and the process in getting it completed:

1. GMA Board attendance at the workshops. While we understand the time commitment is extensive, this update to the Management Plan is very important. It will guide GMA policy and decision-making for years to come. We are not sure how the GMA Board can obtain adequate familiarity with all the issues and the constituents' concerns without some attendance at the workshops. No board members attended the first workshop.

2. Executive Summary. This section is written as part introduction and part summary. An Executive Summary is normally drafted when the remainder of the document is complete. Given the length and technical nature of the material, the Executive Summary will be the most important section of the Plan. It may be the only portion of the document many individuals read. It should summarize the purpose, issues and recommendations, once all of the technical work is complete.

3. Acknowledgements. Throughout the document, there is repetitive recognition of United and Calleguas as the two entities who contribute to the GMA. This recognition is limited almost exclusively to these two entities. Either this self-congratulatory language should be eliminated, or there should be proper acknowledgement of the work of all the individuals and agencies who have and continue to contribute to the GMA's success.

4. Modeling. There needs to be a distinct section that better describes the model details used for the technical analysis. This section need not be long, but it should include mention of the software, construction, assumptions and details of the model construct. It ought to give enough information for the technically capable reader to understand its basics.

5. Organization and Redundancy. There is tremendous redundancy in the report. Perhaps with different organization, it could be slimmed down significantly. You might describe the water quality and quantity issues generally applicable to all areas, along with the general concept of basin management objectives. Then discuss all the issues comprehensively, separated for each basin or in some cases regions with multiple basins. As an alternative, some of the nonessential background and detailed technical information might be moved to appendices.

6. Management Strategies: Organization. In a fashion, the Management Plan is really several separate management plans. Perhaps it should be organized by basin for the three content subjects: strategies under development, future strategies and actions to attain BMO's. There may need to be one more general section that addresses those strategies that cross basin boundaries. You may be able to combine all the basin specific discussions in one section for each basin. A couple different organizational approaches might be tested, with the goal of reducing redundancy and volume of text.

Fox Canyon Groundwater Management Agency
June 22, 2006
Page 3

7. Specific strategy: Forebay priorities. The potential over-reliance on the Forebay under certain conditions is acknowledged in the document. However, there is no mention of the importance, from a policy perspective, to establish some hierarchy for use of the Forebay. There will be increasing reliance on the Forebay. To the extent access to the Forebay may be limited under certain conditions; the GMA board must consider limiting certain uses before others.

8. Specific strategy: Transfers across basins. There is no direct mention that transfers (of allocation or credits) from challenged areas to areas of abundance may be the simplest method of mitigating problems. This has been a policy not favored in the past. However, this is an appropriate time to reconsider this question, particularly if the technical analysis suggests that a surgical approach is required to solve certain problem areas.

9. Specific strategy: Ag recycled water use. The draft Plan acknowledges (assumes) that larger volumes of recycled water will be available for Ag use in the future. The assumption is correct that highly purified recycled water will be available and recycled water use could be a very efficient method of solving several regional problems. However, there is some resistance in the Ag community to take direct use of recycled water. The resistance is not over the quality of the recycled water, but over the required reporting to distributors and product buyers that the crop was grown with recycled water. As long as there is the Ag industry perception that recycled water use may harm the user's competitiveness, recycled water will not be widely accepted. The Board may be able to help influence certain industry groups to alter the current reporting requirements that create these problems for individual users.

10. Analytic methodology. There appears to be no intent to model the expected (inevitable) conversion of Ag use to M&I use over the period of the modeling run. Without this detail, the modeling exercise may provide very misleading results. For example, there are several significant Ag to M&I projects that are in the planning stages located in the south Oxnard Plain area, nearby the City's wastewater treatment plant and the military bases. The result of these conversions will be a shift in groundwater use from wells in a highly sensitive area, to City and United wells located far from the coast (and imported water). If the model does not take into account these expected transitions, it will predict a materially different future than that which will occur. In this fashion, the modeling results may be very misleading.

11. Water quality. It is somewhat troubling that the cornerstone of the Plan is the setting of Basin Management Objectives, some of which are water quality objectives. However, the model has no capability to predict water quality changes. Thus, we need to be very careful in how we set and monitor compliance with the Basin Management Objectives.

12. Periodic update. Either as a component of the Plan, or as a Board measure in adopting the Plan, there should be a built in requirement to update the Plan no less than every 5 years. This should not be so difficult if the model proves to be as useful a tool as is expected.

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13. A few detail comments (there are several other nits in the document that we assume will be fixed in future drafts):

a. Pg. 12. There is no such thing as "in-lieu" credits. Ordinance 8 only defines storage and conservation credits. There are special credit transfer agreements/programs the GMA has approved that amount to "in-lieu" transfer of credits, but the term has no meaning in Ordinance 8.

b. Pg. 12. Ordinance 8 requires Ag to demonstrate 80% efficiency, based on the individual crops grown. The Plan does not propose tightening the efficiency percentage as a potential method of reducing water use. Also, the current reporting requirements are not clear in requiring that the efficiency calculation is to be based on irrigated acreage, not total owned property. In some cases, the irrigated acreage may be materially smaller than the property footprint. In that circumstance, the user gets a substantial benefit in reporting efficiency based on the property footprint instead of the irrigated acreage.

c. Pgs. 13, 16. There is no mention of M&I return flows as a source of recharge.

d. Pg. 20. Two different definitions of basin yield are used and overdraft is not defined.

e. Pg. 23. The discussion of the decreasing trend of extractions is incomplete and therefore misleading. As to the Ag side: (1) there is no quantification of the reduction of Ag pumping resulting from reduced acreage in production over the past two decades, and (2) there is no recognition that the initial period against which we are measuring reduced usage was a very dry period. During dry periods, Ag groundwater use tends to be greatest. Since those early years, we have been in a generally wet period. Thus, we would expect a natural reduction in Ag groundwater use simply based on the historical hydrology.

As to the M&I side, there is no quantification of the increase in municipal demand as a result of conversion of Ag use to M&I use. There is no discussion of the relative efficiencies of use of water prior to the imposition of the cutback goals. The implication of the current discussion in the Plan is that Ag has done more than its share and M&I has not. There is insufficient information or analysis for this conclusion or implication. This discussion should either be made complete and correct, or eliminated, especially if policy decisions might be influenced by it.

f. Pg. 29. The discussion of increasing salt concentrations in the Las Posas basins is somewhat conclusory and incomplete. It might help to actually provide the POTW discharge water quality for TDS and chlorides, so that it would be more clear to the reader that the problem is, in fact, generating from aquifer conditions, not discharge water quality.

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The M&I Provider's Group and Curtis Hopkins will continue to be very actively involved in finalizing the Plan. We appreciate the Board's instructions to develop the Plan in an open and interactive environment. Thank you for your consideration of these comments and those that are certain to follow.

Best Regards,

Robert J. Saperstein
For HATCH & PARENT
A Law Corporation

ROB:olr

cc: Board of Directors of Fox Canyon Groundwater Management Agency
Jeff Pratt
David Paparo
M&I Provider's Group

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PUBLIC WORKS DEPARTMENT
Water Division
251 South Hayes Avenue • Oxnard, CA 93030-6058
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16 August 2006

Transmitted Via Electronic Mail

Fox Canyon Groundwater Management Agency
c/o Dr. Steve Bachman
800 South Victoria Avenue, L#1600
Ventura CA 93009

Subject: Additional Interim Comments on Draft Groundwater Management Plan

Dear Dr. Bachman:

This letter sets forth additional interim general comments on the Draft Fox Canyon Groundwater Management Agency ("FCGMA") Groundwater Management Plan ("Plan") and the current planning process by the City of Oxnard. A draft of this letter and the substantive comments herein were also discussed at the Municipal & Industrial ("M&I") Providers Group meeting on 15 August 2006. Those in attendance expressed their general support for the recommendations set forth below. We will provide more specific comments when the results of the basin model become available. We understand that the modeling results will be available by the end of this month, and that the draft Plan will be amended to include specific recommendations based upon the results. The M&I Provider's Group and its consultant, Hopkins Groundwater Consultants, will need sufficient time to review the model results and the revised draft Plan when available, so that we can provide meaningful comments.

As an interim effort, we are submitting these additional comments to supplement the comments provided by the City of Oxnard and others by letter, dated 22 June 2006. Our additional interim comments are as follows:

1. At the last workshop on the draft Plan, the group discussed the potential that incorrect assumptions about the quantity of groundwater production could result in erroneous outcomes from the model. Indeed, there is substantial anecdotal evidence that groundwater production reporting may be materially incorrect because of inaccurate meters or other faulty reporting mechanisms. For this reason, we recommend that the model be run to assume a band of uncertainty relating to the quantity of groundwater production within FCGMA. Such sensitivity analysis will help verify the integrity of the model results.

Fox Canyon Groundwater Management Agency
16 August 2006
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2. As a related matter, the FCGMA will pursue an aggressive review of meter calibrations over the next several years. However, this process is not scheduled to start until 2007 and it will take three years to complete the first cycle. We recommend that the model be periodically rerun and updated with this new, more accurate production data when it becomes available. In the interim, we recommend that FCGMA staff review suspect accounts and perform a preliminary audit of groundwater production reporting to determine the scope of potential discrepancies.

3. The Draft Plan sets forth several potential future management strategies that should be further explored for their potential effectiveness in addressing seawater intrusion and other adverse hydrogeologic conditions. We recommend that the next draft of the Plan prioritize these potential future strategies in terms of their potential effectiveness. We further recommend that the FCGMA develop procedure to apply a cost/benefit analysis to determine which of the prioritized strategies should be implemented.

4. As a general matter, we also encourage the FCGMA to consider more dynamic use of aquifers with dewatered storage space as a potential resource for future conjunctive use programs. Other basins, such as the Chino and Orange County basins, are currently planning and using available dewatered storage space for local and regional conjunctive use programs that yield better water supply reliability and financial benefits to support other necessary basin management programs. The FCGMA could pursue similar programs. There are numerous hydrogeologic and policy matters that must be resolved to implement a large scale groundwater storage program. Still, we recommend that the Plan include additional and more detailed discussion of potential opportunities for active conjunctive use programs within the FCGMA area.

We look forward to viewing the model results and the next iteration of the draft Plan so that we may provide more specific comments. As we noted in our prior letter, we appreciate the open and interactive environment in which this planning effort is being conducted. Thank you for your consideration of these additional interim comments.

Sincerely,

Anthony A. Emmert
Water Resources Manager

cc: Board of Directors, Fox Canyon Groundwater Management Agency
Jeff Pratt
Gerhardt Hubner
David Panaro
M & I Providers Group

[illegible]

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August 16, 2006

Mr. David Panaro
Fox Canyon Groundwater
Management Agency
800 S. Victoria Avenue
Ventura, CA 93009

Re: Draft Goundwater Management Plan

Dear David:

Pleasant Valley County Water District ("PVCWD") has reviewed the Fox Canyon Groundwater Management Agency (GMA) Draft Groundwater Management Plan. The staff of the GMA and their consultants are to be congratulated on their efforts in drafting this comprehensive document. We continue to believe that the best way to address our groundwater issues in Ventura County is the consensus building approach that the GMA has always embraced. In our review we have several initial comments. Our comments are made sequentially based upon the GMA draft.

1. On page 23, under the section "*Groundwater Extractions*", in the third paragraph it refers to increased agricultural efficiencies. We believe that somewhere in this paragraph reference should be made to the fact that extractions from the groundwater may have also decreased because increased yields from the Freeman diversion and the Conejo Creek project.

2. On page 43, in the section entitled "*Assessment of Basin Management Objectives*", in the second paragraph it refers to BMOs for groundwater levels in the Pleasant Valley basin. In table 3, it makes reference to Basin Management Objectives in the Pleasant Valley area, but does not set forth what the current levels are, it would be helpful to state the groundwater BMOs.

3. On page 48, under the section "*Contingency Plan for LAS Seawater Intrusion*", it states that the GMA staff has developed a contingency plan to address the intrusion of seawater into the LAS. It would be helpful if drafts of that Contingency Plan could be made available for public review.

Mr. David Pantaro
Fox Canyon Groundwater
Management Agency
Re: Draft Goundwater Management Plan
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4. On page 50, under the section "*Conejo Creek Diversion Project*", the last sentence references that over the "net 20 years" that the yield of the diversion might decrease. There obviously is a spelling error there in that the word "net" should be "next". Furthermore, input should be sought from Camrosa Water District to determine whether or not their proposed plans will in fact reduce yield to Pleasant Valley. In discussions with Richard Hajas, it is our understanding that Camrosa's intent is to continue to provide current levels of diverted water to Pleasant Valley and in fact yields may be increased.

5. On page 55, under the section "*Great Project (Recycled Water)*", the first paragraph makes reference to the delivery of recycled water to the Pleasant Valley area. Pleasant Valley has continued to express their concerns to the City of Oxnard about the suitability of the recycled water for agricultural use. In particular, Pleasant Valley is concerned about the "stigma" that recycled water has in the market place. Many growers are now required to provide information on the source of their irrigation water. In the event that recycled water is used, the agricultural produce is often downgraded.

   Also, Pleasant Valley has concern about the injection of recycled water into the LAS. Injection into the LAS is discussed on pages 65 and 66. Because the LAS is the only groundwater source for the Pleasant Valley County Water District, Pleasant Valley will closely scrutinize any injection of recycled water into the LAS.

   We feel that a better alternative to injection would be the transportation of the recycled water to the spreading grounds. This would enhance recharge and remove concerns relative to injection.

6. On page 59, under the section "*Non-Export of FCGMA Water*", the last paragraph on that page states "It appears that current ordinances and policies of the FCGMA are sufficient to deal with its export issue." In light of recent issues, the ordinances of the GMA should be reviewed again to make sure that they are adequate to address the export issues. In particular, the enforcement provisions relating to export of "GMA" water should be closely reviewed.

7. On page 63, under the section "*Increase Diversions from Santa Clara River, Potential Effectiveness*", the first sentence states "The Santa Clara River remains a primary recharge source for the Oxnard Plain and Pleasant Valley basins." Based upon our understandings of various studies, it is a little misleading to suggest that the Pleasant Valley basin gets much recharge from the Santa Clara River. Although there may be some recharge, even that is disputed, it is clear that the amount of recharge is minimal at best.

Mr. David Pantaro
Fox Canyon Groundwater
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8. Beginning on page 71, under the section "*Shelf Life for Conservation Credits*", it is Pleasant Valley's opinion that at the present time there is no need for "sunsetting" of conservation credits. While conservation credits have been built up by not only Pleasant Valley, but other entities, it was the very purpose of allowing for conservation credits so that the credits could be retained and used for future needs. Pleasant Valley sees no present need to "sunset" the conservation credits. Credits would only be used when there was inadequate surface water from the Freeman Diversion and the Conejo Creek Project, and pumping from our wells were insufficient to meet our needs. Putting a shelf life on credits seems to suggest that Pleasant Valley would utilize their credits to over pump and waste water.

   It is also our opinion that putting a shelf life on credits, will also remove incentives to look for creative water solutions. For example, much of the impetus for Pleasant Valley to participate in the Conejo Creek Project, was the fact that credits would be generated.

We appreciate the opportunity to provide our comments concerning the draft, and look forward to the further development of the plan.

Very truly yours,

ARNOLD, BLEUEL, LAROCHELLE,
MATHEWS & ZIRBEL, LLP

John M. Mathews

JMM/ksvk
cc: PVCWD
S:\USER\SHARE\P\PVCWD\Correspondence\Pantaro 8-16-06.wpd

August 17, 2006

Fox Canyon Ground Water Management Agency
Ventura County Government Center Administration Building
800 South Victoria Avenue
Ventura, California 93009-1600

Attention: Mr. Lynn E. Maulhardt, Chair

Subject: Comments on the Public Review Draft Updated Management Plan dated June, 2006

Dear Mr. Maulhardt:

Saticoy Country Club (SCC) has a vested interest in the proposed changes to the current Fox Canyon Groundwater Management Agency Management Plan (Management Plan Update) but we have not been able to complete our comments in time for the August 21, 2006 deadline for comments. While this letter presents our early thoughts on several issues in the draft Management Plan Update, we intend to continue our effort to prepare comments. Our goal is to have our completed comments shortly after the next FCGMA Groundwater Management Plan Workshop on August 31, 2006. With this schedule we trust our comments will be considered for incorporation in the Final Management Plan Update.

SCC has significantly reduced our water usage through a reduction in irrigated acreage and increased our efficiencies through infrastructure improvements and our water management practices including the following:

- Hired a golf architect to provide a plan to reduce our irrigated acreage from about 117 acres to 95 acres.
- Implemented the 95 acre plan.
- Hired a landscape architect to prepare a drought resistant landscape plan.
- We are in the process implementing the landscape plan.
- Converted many sprinkler heads to more efficient one half head models along the edges of the fairways.
- Rewired each of our sprinkler heads and installed new sprinkler controls for improved individual run time controls.
- We have on-going turf grass studies for additional efficiency improvement.
- A complete irrigation system upgrade evaluation is planned within the next few years.

For the draft Management Plan Update we have identified two areas so far that warrant comments. Those are:

Continuation Of 25% Pumping Reduction

SCC supports all efforts to bring the basins into safe yield and we not only have committed to reduce our overall pumping but we also have committed significant capital resources to increase our efficiencies. As briefly described above we have made a significant efficiency effort already through our infrastructure alterations and water management practices and will continue that effort in the future. As such it is our opinion that to continue the phased reductions to the full 25% reduction (with possible further reductions) only to M&I users is unfair and that the Draft Management Plan Update should either include provisions to reward increases in efficiencies by M&I users and/or to implement additional productive measures to also reduce agricultural pumping.

SATICOY COUNTRY CLUB

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Agricultural users consume far more of the resource and it is completely unfair to place the burden of balancing the basin on the M&I users.

Shelf Life For Conservation Credits

We understand the potential concerns of accumulating Conservation Credits with no expiration date and that this accumulation effectively has left a large theoretical pumping debt on the aquifers. Sunset provisions may be warranted in many cases. Our initial concerns with this proposed provision alteration is how it may impact different size users and also the potential for removal of credits earned through our continued efficiency improvements.

We look forward to discussions on both of these issues in the workshops.

Sincerely,

John R. Powell, RG, CEG
For the Water Committee

City of Camarillo

601 Carmen Drive • P.O. Box 248 • Camarillo, CA 93011-024

Public Works
(805) 388-5380

August 25, 2006

Mr. Jeff Pratt, P.E.
Executive Officer
Fox Canyon Groundwater Management Agency
800 South Victoria Avenue
Ventura, CA 93009

Subject: Comments to Fox Canyon Groundwater Management Agency Draft Groundwater Management Plan (June 2006)

Dear Jeff,

The City of Camarillo, and its consultants, Black & Veatch and Hopkins Groundwater Consultants, Inc., have reviewed the June 2006 Draft Groundwater Management Plan (Draft GMP) prepared by your agency, and attended two Agency workshops. Based on these interactions, we offer the following comments and recommended actions.

Comments Regarding Development of Brackish Groundwater

The Draft GMP provides discussion in several locations regarding the potential feasibility of the development of the brackish groundwater supply in the northern portion of the Pleasant Valley Basin. The following comments are in regards to this subject.

1. Comment: Page 58 indicates the following, *"the City of Camarillo is considering a strategy to move some of its current pumping from the area of the LAS pumping depression beneath Pleasant Valley to this area of poorer-quality rising groundwater. Under this plan, the poorer-quality water would be extracted and desalted in a similar manner to the South Las Posas Basin project approved by the FCGMA."*

   Recommended Action: Consider replacing this text with the following, *"The City of Camarillo has assessed the feasibility of constructing a Groundwater Treatment Facility that*

would be located in the Somis Gap area of the Pleasant Valley Basin (Black & Veatch, August 2005). The study determined the project to be technically feasible and would allow Camarillo to halt pumping from an area of the LAS with depressed groundwater levels and instead pump in an area of rising groundwater levels. This plan is similar in nature to the South Las Posas Basin project, which was previously approved by the FCGMA Board and consistent with policy to move pumping to areas of known substantial recharge (i.e., Oxnard Forebay) which will create more storage space for future recharge events. The City of Camarillo proposes to coordinate pumping strategies between various stakeholders in the neighboring sub-basins in order maintain replenishment of the Pleasant Valley Basin."

2. Comment: The majority of the discussion on page 58 focuses on the development of brackish groundwater in the LAS of the Pleasant Valley Basin by means of Camarillo's Groundwater Treatment Facility project. However, the third paragraph awkwardly mixes in a brief discussion of an alternate subject in an area of the Pleasant Valley Basin that is far away from the observed recharge in the forebay.

   Recommended Action: Please elaborate on the significance of this paragraph to Camarillo's Groundwater Treatment Facility Project or relocate this paragraph to an alternate location to maintain the continuity of the discussion regarding Camarillo's Groundwater Treatment Facility project which is in the forebay.

3. Comment: Page 17 provides the following description of the Pleasant Valley Basin, *"Despite the fault barrier to the west, the LAS is in hydrologic continuity with the adjacent southern portion of the Oxnard Plain Basin, which is the primary recharge source for the Pleasant Valley Basin."*

   Two paragraphs later, the following is stated, *"At the northeast edge of the Pleasant Valley basin, where Arroyo Las Posas flows cross the basin boundary, increased flows in the arroyo have apparently percolated directly into the LAS, significantly raising groundwater levels in City of Camarillo wells. This recharge suggests that this portion of the Pleasant Valley Basin is unconfined, contrary to current understanding of the basin."*

   Recommended Action: Consider the following definition of the Pleasant Valley Basin and explanation of recharge sources for this basin:

   "Historically it was assumed that the LAS of the Pleasant Valley Basin was relatively confined and received little overall recharge. This assumption was based on the understanding that the primary recharge source for this basin was from the adjacent Oxnard Plain Basin to the south and recharge potential between these basins was low due to the low permeability of the Pleasant Valley Basin aquifer in this region, as well as the presence of a fault barrier in the lower portions of the Oxnard Plain. However, since the early 1990's, water levels have begun to rise in the northern adjacent basins. The City of Camarillo has two existing wells in the northeast portion of the Pleasant Valley Basin (hereafter called the Somis Area) and these wells confirm that rising water levels in northern adjacent basins directly impact recharge rates, water quality, and water levels in the Somis Area.

The recharge in the Somis Area (Pleasant Valley Forebay) may be a result of the Saugus Formation being folded upward and subsequently eroding away in the Somis gap area covering the underlying bedrock with a predominantly sandy alluvial layer that allows rapid stream flow percolation. If this theory is correct, it is also likely true that the primary source of recharge for the Pleasant Valley Basin prior to the decline of the water levels in the adjacent northern basins was a forebay in the Pleasant Valley Basin and this primary recharge source is again prevalent due to the recent rise in water levels in the northern basins. It is recommended that additional monitoring and studies be conducted to determine if this theory is correct."

Figure 1 illustrates the conceptual location of the Pleasant Valley Forebay.

4. Comment: Page 58 indicates the following, *"Base flow from the Arroyo Las Posas has migrated completely across the South and East Las Posas Basins and into the northernmost Pleasant Valley Basin, providing a source of <u>new</u> recharge to this portion of the Pleasant Valley Basin. Coordination in pumping strategies between the sub-basins is recommended in order to avoid negatively impacting groundwater levels in the Fox Canyon Groundwater Basin."* As stated in Comment #3, this may not be a "new" source of recharge but instead reestablishing of an old source of recharge to the Pleasant Valley Basin.

   Recommended Action: Consider revising the text to indicate that the Somis Gap was potentially the primary recharge source for the Pleasant Valley Basin prior to pumping activities in the northern adjacent basins.

5. Comment: The Draft GMP does not segregate the Pleasant Valley Basin into sub-basins, it only describes the basin as a whole. Furthermore, the last sentence of the second paragraph of page 17 indicates a lack of current understanding of this basin.

   Recommended Action: Please elaborate on the current understanding of the Pleasant Valley Basin and clarify how the basin is currently handled in the model. It is also recommended that the authors consider sub-dividing the Pleasant Valley Basin into sub-basins (Pleasant Valley Forebay and Pleasant Valley Basin) to assist in evaluating the different potential recharge sources for the basin.

6. Comment: The second paragraph on page 33 indicates groundwater levels in the LAS have consistently been below sea level in the Pleasant Valley Basin. This is not true across the entire basin.

   Recommended Action: Clarify that water levels in the southern portion of Pleasant Valley Basin have historically been below sea level since the 1950's. However, water levels in the northeastern portion of the basin near the Somis gap have historically been above sea level and continue to rise along with levels in the adjacent northern basins.

7. Comment: The last sentence of the second paragraph on page 29 states that: *"It is too early to know whether chlorides in the Pleasant Valley Basin will escalate to a problem affecting local pumpers."* This sentence is restated in the third sentence of the second paragraph on page 35. In both places it should be noted that two City of Camarillo wells (Wells A and B) have already been impacted by a rise in chlorides, which has prompted the City to discontinue use of Well A and to blend water from Well B with higher quality imported water to meet drinking water standards.

   Recommended Action: Revise the referenced sentences to indicate that chloride levels in the southern portion of the basin have risen marginally from rising water levels, but due to limited data, the marginal rise of chloride levels could be much higher. However, as shown on Figure 14 of the draft GMP, sulfate and TDS levels in the northern portion of the Pleasant Valley Basin have been rising steadily and have already exceeded secondary drinking water standards. Available data also indicate that concentrations of iron and manganese are also rising in response to basin recharge and have risen to levels that impair M&I uses.

8. Comment: Page 35 provides discussion on increasing sulfate and chloride levels in the northern Pleasant Valley Basin and indicates water treatment will be needed for potable or irrigation use.

   Recommended Action: Consider expanding the discussion to include the following text: *"Camarillo has evaluated the feasibility of constructing a Groundwater Treatment Facility that would intercept a portion of the poorer water quality surge and remove salts from the aquifer system. This would help protect the water quality in the southern portion of the basin and preserve higher quality water for use by other pumpers in areas of major overdraft. Furthermore, by utilizing the water from the Groundwater Treatment Facility, Camarillo could curtail or eliminate pumping operations in the southern portion of the Pleasant Valley Basin, which would promote recovery of the depressed water table in that region. Further details of the project are provided in the section titled, Development of Brackish Groundwater, Pleasant Valley Basin."*

9. Comment: The second sentence of the last paragraph on page 43 indicates, *"Basin Management Objectives (BMOs) for chloride concentrations in the Pleasant Valley Basin are currently being met, although chlorides are rising slowly in a few wells in the basin."*

   There are a number of wells that indicate that the BMOs are not being met. For example, County data indicate that 1N/21W-1B04 screened 820 to 1150 feet has chloride greater than 200 mg/l, 1N/21W-3C01 screened 956 to 1216 feet has chloride greater than 260 mg/l, and 1N/21W-1D02 screened 107 to 437 feet has chloride greater than 450 mg/l.

   Recommended Action: Consider revising the statement to indicate that BMOs are not currently being met throughout the entire Pleasant Valley Basin.

10. Comment: The first sentence of the last paragraph on page 58 indicates, *"Under current FCGMA policy, City of Camarillo pumping of poor-quality groundwater along Calleguas*

Creek would have to be pumped using existing allocations if the well was within the FCGMA boundary." The City of Camarillo understands that current FCGMA policy has evolved over time and has previously allowed unrestricted pumping of poorer quality shallow groundwater, with the semi-perched zone in the Oxnard Plain and the South Las Posas along the Arroyo being two examples.

Recommended Action: Consider revising the last paragraph of page 58 to say: *"Previously, City of Camarillo pumping of poor-quality groundwater along Calleguas Creek would have to be pumped using existing allocations since the wells are within the FCGMA boundary. However, as FCGMA policy has evolved over time, unrestricted pumping of poorer quality shallow groundwater has been allowed. For the Camarillo Project, a coordinated effort between the FCGMA and City of Camarillo should be undertaken to define the potential benefits of operating the City of Camarillo Groundwater Treatment Facility. Extractions of poor-quality water without allocations are discussed in more detail in the section titled "Recommended Additions to FCGMA Policies."*

Comments Regarding Further Pumping Reduction Strategies

The Draft GMP includes discussions on the continuation of 25 percent pumping reductions. The M&I users are impacted by reduction strategies while agricultural users are impacted by irrigation efficiency strategies. The actual benefit of the 25 percent pumping reduction is limited because the M&I component of groundwater use (about 30 percent) is significantly less than agricultural uses (about 70 percent) as illustrated in Figures 4 and 5 of the GMP. As a result, this strategy will only ensure a minor reduction in the overall pumping, which will be from the M&I users. This conserved amount could easily be negated by inefficient agricultural practices. Therefore, it is recommended that the 25 percent (or greater) reduction strategies should be reviewed in conjunction with agricultural efficiency calculations. In addition, FCGMA should consider more restrictive crop efficiencies and consider a replenishment fee to be paid by all users.

Specific comments related to pumping reduction strategies are:

11. Comment: The last 3 paragraphs on page 23 discuss groundwater extraction reduction. The numbers presented in the second paragraph in this section indicates that the total reduction in pumping is about 22 to 23 percent. The next paragraph indicates that the largest decrease in pumping is from agricultural uses, while the last paragraph indicates that the first phase of the FCGMA enforced pumping reductions of 15 percent resulted in the reduction of 8,300 acre-feet of pumping by the M&I users. However, the discussion on the reduced pumping does not appear to reflect the transfer of allocation from agricultural uses to M&I service, or the fact that while some M&I providers are using all their allocation, others have been conserving them for conjunctive use with other sources. We believe that the apparent 15 percent reduction in pumping is somewhat coincidental and that the overall M&I allocation for groundwater use has increased substantially due to land use conversion.

Recommended Action: This discussion should compare the changes in acreage irrigated and

M&I acreage served over the same time period that pumping reduction has occurred. This may also be the place to discuss the likelihood that under recording meters, or agricultural wells with no meters at all, may be contributing to the apparent reduction in reported agricultural pumping.

12. Comment: The second paragraph of page 52 implies that there is a universal acceptance of the pumping reductions and the stiff penalty for over pumping. The City of Camarillo doesn't agree that there is a universal acceptance of the pumping reductions. It is the City's view, as well as other M&I users, that the reduction is not equitable and recommends that the efficiency policy be reviewed in conjunction with production meter testing activities.

    Recommended Action: Consider revising the text to indicate there may be general acceptance of the pumping reduction policies but not universal agreement. The reduction policies should consider equal distribution in sharing the burden in resolving water level deficits in the basins..

General Comments on the Draft GMP

The following comments and recommendations are more general in nature:

13. The third paragraph on page 59 states that the baseline allocation is two acre-feet per acre. The City of Camarillo understands that the two acre-feet per acre may have been the historical allocation, not the baseline allocation. Baseline allocation is only one acre-foot of water per acre, and should be considered when analyzing the baseline allocation policies.

14. Page 63 provides a discussion on the potential effectiveness of importing additional state water. Further clarification of this paragraph would be very helpful in understanding this potential strategy.

15. Page 73 provides a discussion on penalties used to purchase replacement water. It should be noted that a large percentage of overpumping is by agricultural users who have the ability to escape penalties by switching to irrigation efficiency and consequently the revenue from these fees has historically been very little. Therefore, using this revenue to purchase replenishment water may be of little benefit to the basins.

16. Page 79 includes a section on *"Extractions of Poor-Quality Water Without An Allocation"*, which would be an addition to current FCGMA policy. The City of Camarillo supports such a strategy that allows projects that would benefit the overall aquifer system. The City of Camarillo would like to see this policy implemented and would appreciate the opportunity to review and comment on the draft policy.

17. FCGMA has reduced pumping and approved projects that provide some benefit to some portion of aquifers within the agency boundaries. However, this does not promote the implementation of projects in critical areas of the basin that are just outside of agency boundaries.

Before implementing the next stage of pumping reductions on M&I users, the City of Camarillo recommends that the FCGMA evaluate larger picture projects that could help solve groundwater impacts in the most critical areas and potentially provide solutions in-lieu of additional pumping reductions.

Further pumping reductions could possibly be avoided if the current basin by basin management approach was revised and strategies were implemented based on the principal that downstream basins are impacted by upstream uses and that the impact is therefore created by both agricultural and M&I users who pump from all basins.

FCGMA could consider implementing a "mitigation fee" of approximately $10/AF that would be paid by all groundwater users in the FCGMA. This strategy would allow funding for agencies like UWCD, Oxnard, or Calleguas MWD to develop projects that would effectively improve the conditions of the basins as a whole by moving water to over pumped areas within FCGMA boundaries. This approach would help prevent basin by basin management which could inordinately impact users in downstream basins, like the City of Camarillo.

18. The City of Camarillo is under the impression that there is a quantifiable amount of groundwater being exported outside the FCGMA boundary from Pleasant Valley and Las Posas Basins. The City of Camarillo would recommend that FCGMA pursue controlling the exportation of groundwater before additional pumping reductions are approved.

19. The Draft GMP indicates that FCGMA is considering expiring accumulated groundwater credits. It should be noted that M&I users conjunctively balance surface water and imported supplies with local groundwater thereby conserving groundwater for use when surface and imported supply is not available. Therefore, setting a time limit on credits works against this water supply management philosophy.

    Credit reduction is an issue that should be reviewed separately for M&I uses and agricultural uses. Similar to implementing 25 percent pumping reductions, credit reductions would only impact M&I agencies who conduct long-term planning, since agricultural users could go on efficiency allocation and would not be impacted by a loss of credits. M&I users do not have this option.

    In regards to agricultural credits, please note that UWCD surface water deliveries have in part allowed accumulation of credits by agricultural users that receive surface water for irrigation. Those who funded the Freeman Diversion have in part funded the accumulation of these credits when surface deliveries were annually increased.

    The credit reduction strategy is believed to be of very little benefit to the overall basins but would have a significant impact to M&I users. If there is a desire to eliminate the perceived "groundwater debt", agricultural credit reduction should be the first consideration.

Pages 71 and 72 state that there are tens of thousands of acre-feet of accrued conservation credits. The credits that the City of Camarillo has accrued came at a high cost, when we purchase more expensive imported water. Poor quality groundwater has forced the City of Camarillo to blend groundwater with imported supplies, subsequently accruing groundwater credits. The City of Camarillo intends to retain its credits until such time they are needed to meet demands during a drought. Even though credits cannot be sold, they have a value to M&I users that is equal to the over pumping surcharge.

FCGMA should reconsider the proposed strategy of expiring/reducing M&I groundwater credits .

20. Page 73 discusses proper filling and capping of abandoned or leaking wells and states that FCGMA helps with the costs associated with well abandonment. The owner of the land that the well is on should be responsible for costs associated with destruction of well(s).

21. Page 75 provides a discussion of additional reductions in pumping allocations. It is recommended that further reductions not be implemented until after the meter testing effort is complete. Perhaps FCGMA should require an initial testing of all meters within one year. This would be very beneficial to the modeling effort because the model will only be as accurate as the information used to develop it.

The City of Camarillo requests the opportunity to provide additional comments once the groundwater modeling effort for the GMP is available for review. The City believes it would be valuable if the GMP provided more quantifiable measures regarding water level deficits and anticipated impacts each FCGMA strategy would contribute towards reducing those deficits. However, the City recognizes that those quantifiable measures would much easier to identify once the modeling results are available.

Please contact me at (805) 388-5334 if you have any questions or need additional information.

Very truly yours,

City of Camarillo

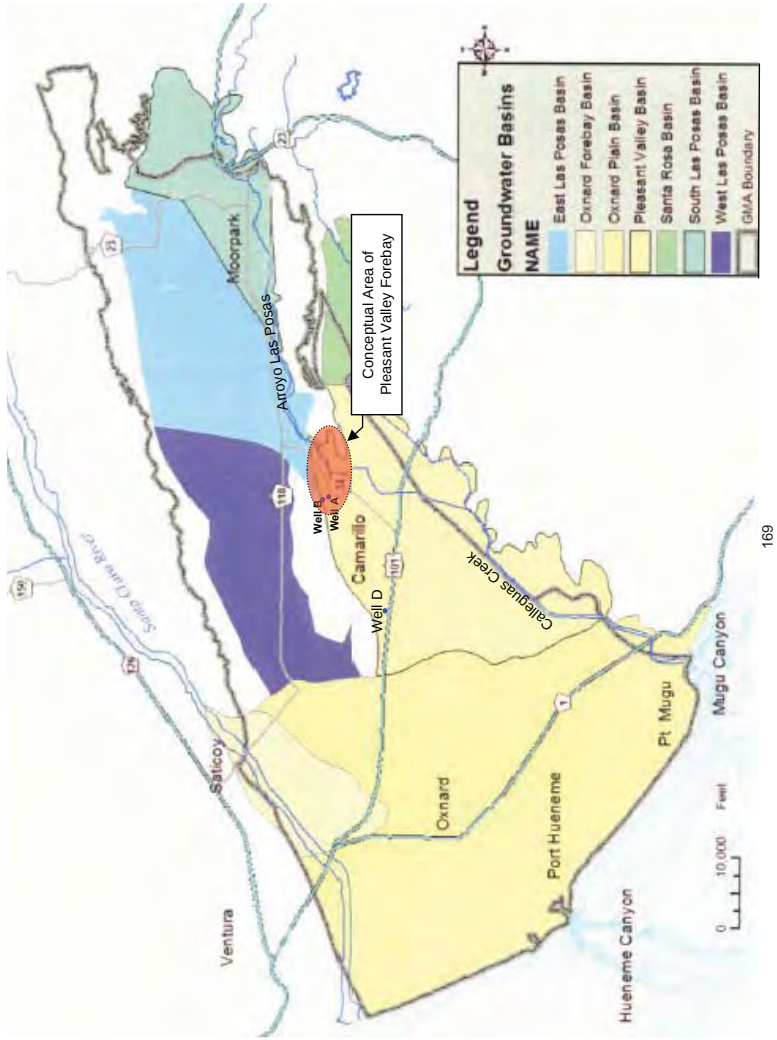
Lucia McGovern
Deputy Director of Public Works

Attachment – Figure of Pleasant Valley Forebay

City of Camarillo Comments on June 2006 Draft GMP
August 25, 2006

cc:
Tom Smith – City of Camarillo
Curtis Hopkins – Hopkins Consultants
Randy Krueger – Black & Veatch
Tony Emmert – City of Oxnard
Jim Kentosh – UCWD
Jim Passanisi – City of Ventura
Carrie Mattingly – City of Port Hueneme
Steve Bachman, PhD – UCWD
Don Kendall, PhD – Calleguas MWD

Figure 1
Pleasant Valley Forebay Map



Lawrence (Larry) Fuller
7935 Dusty Lane
Somis, CA 93066
805-386 –4086

September 26, 2006

Fox Canyon Groundwater Management Agency
800 S. Victoria Ave.
Ventura, CA 93009

Attn: David Panaro, Jeff Pratt & Steve Bachman

Subj: Comments and concerns on the FCGWMA Management Plan

Hi David,

I told you that I would put in writing some of my thoughts and concerns expressed in the 1st workshop. My research has led me to look at the management plan in the light of the State of California water case law especially the case CITY OF BARSTOW et al., v. MOJAVE WATER AGENCY (S071728) 21 August 2000. This case clarifies the Supreme Court of California's position on water rights. A summery of the Courts decisions can be found in Downey Brand Attorneys LLP document titled California Water Law & Policy Reporter- October 2000.

It is my understanding that the FCGWMA used the "equitable" (physical) concept for allocating pumping to all of the Fox Canyon aquifer pumpers. This method of allocation is clearly a violation of the law, if I understand the California Supreme Court ruling cited above. The three levels of priority, as stated in the case law, are 1st Priority Overlying Owners, 2nd in priority are appropriators and 3rd are exporters (water transferred out of the immediate pumping area).

The clearest statement of this fact is found on page 29 starting with line 3. "We repeat the guiding principle: 'Under California law, "[p]roper overlying use,...is paramount, and the right of an **appropriator**, being limited to the amount of **surplus**, must yield to that of the overlying owner in the event of a shortage unless the appropriator has gained prescriptive rights through the taking of nonsurplus waters." [Citation.]' (*Hi-Desert County Water Dist. V. Blue Skies Country Club, Inc., supra*, 23 Cal.App.4th 1723-1731, Thus, while the rights of all overlying owners in a ground water basin are correlative, and subject to cutbacks when the basin is over drafted, **overlying rights are superior to appropriative rights**. Here, the trial court did not attempt to determine the priority of water rights, and merely allocated pumping rights based on prior production. This approach elevates the rights of appropriators and those producing without any claim of right to the same status as the rights of riparins and overlying owners. The trial court erred in doing so."

It is my request that the FCGWMA board of directors DO NOT make any further pumping reductions until these legal issues can be resolved. The case law sited states that only the Court has the right to restrict our pumping. A little caution now could prevent law suits caused by not following the law. (page 54,61) The original allocation system did not take into consideration efficient use of water and therefore it was/is flawed. **The allocation should also consider the number of water sources available to a given property**. Some properties have water available via pipelines from major water suppliers while many properties are dependent on their wells as the only source of water. Small users, Coops and small M &I/Agriculture systems are not addressed specifically in Management Plan. In addition to this the FCGWMA board has no small operation representative on the board to insure that their interests and concerns will be heard.

Another issue that I talked about in the workshop was the FCGWMA's Board approval of CMWD application for injection/storage facilities in North Las Posas Groundwater Basin.

According to my understanding this letter opens the door for CMWD to acquire Fox Canyon Aquifer **prescriptive** pumping rights. The Board has already allowed the injection wells to be drilled and injection of imported water is progressing. It is imperative that CMWD be restricted **IN WRITING** that they will not be allowed to extract water outside of their injection field. The Board can not by letter change the California water laws regarding prescriptive water rights that can and will be developed if pumping is allowed outside of the injection site boundaries. See page two paragraph 4, end of 1st sentence....**OR IN THE NEAR VICINITY**. What constitutes "near"? One mile, five miles? It is a known fact that CMWD wants to pump Fox Canyon water to blend with their imported water. Overlying owner priority rights will be affected if this issue is not addressed before any extraction is started out side their injection field.

Another problem area with CMWD that was discussed, concerned the One for One or gallon for gallon of water pumped to be extracted. When I addressed this issue your engineer made light of my comments concerning both the wetting factor of the dry sands and the drift factor of the water moving through the aquifer. I have friends that are very knowledgeable in the field of both hydrology and geology. They state that anyone who knows anything about the Fox Canyon aquifer knows about the drift out through Hueneme Canyon and the losses of fluid due to wetting of a dry formation. I can only assume that CMWD is injecting into an area that is dry—water does not compress. David this is right down your alley. I know with your training you can do the calculations for both the wetting and the transfer function even if your engineer can't. The FCGWMA should not be providing free water to CMWD.

The Court case sited discussed in detail the effect of allowing a right by prescription to be developed. Please look into all of the FCGWM ordinances in the light of the rulings by the Court.

Sincerely,

Larry Fuller

Encl: Copies for Mr. Jeff Pratt
Mr. Steve Bachman

Appendix C

District's 2017 Annual Water Quality Report

Annual

WATER QUALITY Report

Reporting Year 2017

Presented by:
Ventura County Waterworks District No. 1

General Information About Water Sources

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

What Makes Water Hard?

If substantial amounts of either calcium or magnesium, both nontoxic minerals, are present in drinking water, the water is said to be hard. “Hard” water does not dissolve soap readily, so making lather for washing and cleaning is difficult. Conversely, water containing little calcium or magnesium is called “soft” water.

Maintaining High Standards

Once again we are proud to present our annual water quality report. This report covers the testing performed between January 1 and December 31, 2017. We continue to maintain high standards in an effort to deliver a reliable water supply that meets Title 22 requirements. Please know that we will always work diligently to provide you with quality water at a reasonable cost. We will also remain vigilant in meeting the challenges of new regulations, new local source water production, water conservation, community outreach and education while continuing to serve all your water needs.

We take our responsibility seriously for providing you and your family with quality drinking water. We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions or concerns, we are always available to assist you.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Community Participation

You are invited to attend our public meeting to voice concerns about your drinking water. The Citizens' Advisory Committee meets monthly at the District office located at 6767 Spring Road in Moorpark. If you wish to attend, please call (805) 378-3000 for the specific date and time.

For more information about this report, or for any other questions relating to the quality of your drinking water, please contact Shane Dass, Water and Wastewater Laboratory Manager, at (805) 378-3089.

Information for Customers with Special Water Needs

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Where Does the District's Water Come From?

The District's water supply comes from both imported and local sources. In 2017, 82% of our total water supply came from the State Water Project. The State water originates in Northern California where it is captured in reservoirs north of Sacramento and released into the Delta of the Sacramento and San Joaquin rivers. It is transported via the 444-mile California Aqueduct to State Water Project contractors such as the Metropolitan Water District of Southern California (MWD). The District water is filtered and disinfected by MWD at its Jensen Filtration Facility in Granada Hills. MWD then delivers the water to its 26-member public agencies, including Calleguas Municipal Water District (CMWD), Ventura County's regional wholesale purveyor and the District's direct supplier.

Local water is pumped from the Las Posas Basin by five (5) groundwater wells owned and operated by the District. The wells produced approximately 18% of our total supply in 2017. The District treats the water that is pumped from these wells, and then delivers it to our customers. Local and imported water is delivered to our customers through our distribution system, which consists of 19 reservoirs, 11 booster pump stations, and approximately 168 miles of water lines. Water service is provided through approximately 10,921 service connections.

In 2017, the District supplied approximately 9,701 acre-feet of water to over 38,700 people in the city of Moorpark and the contiguous unincorporated areas to the north and west. The water supplied by the District was used for residential, industrial, commercial, agricultural, institutional and fire protection purposes.

Lead in Household Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

Information on Radon

Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. You should pursue radon removal for your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that are not too costly. For additional information, call your State radon program (1-800-745-7236), the USEPA Safe Drinking Water Act Hotline (1-800-426-4791), or the National Safety Council Radon Hotline (1-800-767-7236).

Summary of Water Quality Results For 2017

During the past year, we have taken hundreds of drinking water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below list all the drinking water contaminants that were detected in 2017. The State requires that we monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year. Some of this data, though representative of water quality, are more than one year old.

			Local Water Supplied by: Waterworks District No. 1		Imported Water Supplied by: Calleguas Municipal Water District			
			Percent of Supply	*18%*	*82%*			
Parameter (Unit of Measure)	**MCL [MRDL]**	**PHG (MCLG) [MRDLG]**	Average	Range	Average	Range	Violation	**Major Sources in Drinking Water**
PRIMARY DRINKING WATER STANDARDS--Mandatory Health-Related Standards								
CLARITY (a)								
Turbidity (NTU) (TT)	Highest Single Value		n/a		0.06		No	Soil runoff
	% of samples <0.3		n/a		100%		No	
DISINFECTION BY-PRODUCTS AND DISINFECTANT RESIDUALS								
Bromate (ppb) (b)	10	0.1	n/a	n/a	7.4	3.3 - 8.9	No	By-product of drinking water disinfection
Haloacetic Acids (ppb) (c)	60	n/a	10.3	1 - 14	9.5	6 - 12	No	By-product of drinking water disinfection
Total Chlorine Residual (ppm)	[4]	[4]	1.47	0.92 - 1.77	2.3	1.5 - 2.6	No	Drinking water disinfectant added for treatment
Total Trihalomethanes (ppb) (c)	80	n/a	32.1	2 - 40.5	28.1	13.0 - 38.5	No	By-product of drinking water chlorination
INORGANIC CHEMICALS								
Aluminum (ppb)	1,000	600	ND	n/a	86	ND - 120	No	Erosion of natural deposits, residual from water treatment process
Arsenic (ppb)	10	0.004	ND	n/a	0.2	ND - 7	No	Erosion of natural deposits, runoff from orchards
Barium (ppm)	1	2	ND	n/a	ND	n/a	No	Erosion of natural deposits, discharge from oil & metal refineries
Fluoride - Distribution System (ppm) (d)	2.0	1	0.2	0.2 - 0.3	0.8	0.7 - 1.3	No	Water additive that promotes strong teeth
Nitrate (as N) (ppm)	10	10	ND	n/a	0.6	ND - 0.6	No	Runoff and leaching from fertilizer use, erosion of natural deposits
Selenium (ppb)	50	30	ND	n/a	0.5	ND - 26	No	Runoff and leaching from fertilizer use, erosion of natural deposits
RADIOLOGICALS								
Gross Alpha Particle Activity (pCi/L)	15	(0)	3.87	0.99 - 8.94	ND	ND - 3.3	No	Erosion of natural deposits
Gross Beta Particle Activity (pCi/L)	50	(0)	n/a	n/a	ND	n/a	No	Decay of natural and man-made deposits
Uranium (pCi/L)	20	0.43	1.0	0 - 2.8	ND	ND - 1	No	Erosion of natural deposits

Home Tap Water Samples Collected for Lead and Copper Analyses

Parameter (Unit of Measure)	Year Sampled	RAL	PHG (MCLG)	Amount Detected (90th %)	# Sites Above AL / Total Sites	Violation	**Major Sources in Drinking Water**
Lead (ppb)	2015	15	0.2	1.6	0 / 30	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	2015	1.3	0.3	0.25	0 / 30	No	Corrosion of household plumbing systems; erosion of natural deposits

SECONDARY DRINKING WATER STANDARDS--Aesthetic Standards

Parameter	**Secondary MCL**	**Notificatio Level**	Average	Range	Average	Range	Violation	**Major Sources in Drinking Water**
Aluminum (ppb) (e)	200		ND	n/a	86	ND - 120	No	Erosion of natural deposits, residual from water treatment process
Chloride (ppm)	500		22	17 - 31	85	74 - 121	No	Runoff and leaching from natural deposits, seawater influence
Color (Units)	15		ND	n/a	2	ND - 5	No	Naturally-occurring organic materials
Odor Threshold (Units)	3		**5**	**5 - 16**	2	ND - 2	**Yes**	Naturally-occurring organic materials
Iron (ppb)	300		50	0 - 150	ND	n/a	No	Leaching from natural deposits
Manganese (ppb)	50		25	2 - 70	ND	n/a	No	Leaching from natural deposits
Specific Conductance (µS/cm)	1,600		757	600 - 1050	594	420 - 782	No	Substances that form ions when in water, seawater influence
Sulfate (ppm)	500		194	139 - 302	71	61 - 107	No	Runoff and leaching from natural deposits
Total Dissolved Solids (ppm)	1,000		533	430 - 720	347	316 - 440	No	Runoff and leaching from natural deposits
Turbidity (NTU) (f)	5		1.0	0.5 - 1.7	ND	0 - 0.9	No	Soil runoff

ADDITIONAL PARAMETERS (Unregulated)

Alkalinity (ppm)	NS	NS	160	140 - 190	87	85 - 110
Boron (ppb)	NS	1,000	167	100 - 300	193	190 - 300
Calcium (ppm)	NS	NS	84	71 - 107	27	27 - 36
Chlorate (ppb)	NS	800	n/a	n/a	27	0 - 28
Hardness (Total Hardness) (gpg)	NS	NS	17	14 - 23	7.0	6.9 - 9.4
Magnesium (ppm)	NS	NS	20	13 - 32	13	12 - 17
N-Nitrosodimethylamine (ppt)	NS	10	n/a	n/a	0.0	ND - 3.2
pH (pH Units)	NS	NS	7.5	7.4 - 7.6	8.3	7.7 - 8.3
Potassium (ppm)	NS	NS	4	3 - 6	3.2	3.1 - 4.0
Sodium (ppm)	NS	NS	50	35 - 78	70	58 - 107
Total Organic Carbon (ppm)	NS	NS	n/a	n/a	2.5	2.2 - 3.1
Vanadium (ppb)	NS	50	ND	n/a	3.9	ND - 4

Lead Sampling in Schools

The Division of Drinking Water (DDW), in collaboration with the California Department of Education, has taken the initiative to begin testing for lead in drinking water at all public K-12 schools. In early 2017, DDW and Local Primacy Agencies issued amendments to the domestic water supply permits of approximately 1,200 community water systems so that schools that are served by a public water system could request assistance from their public water system to conduct water sampling for lead and receive technical assistance if an elevated lead sample is found. To further safeguard water quality in California's K-12 public schools, California Assembly Bill 746 published on October 12, 2017, effective January 1, 2018, requires community water system to test lead levels, by July 1, 2019, in drinking water at all California public, K-12 school sites that were constructed before January 1, 2010.

About Our Odor Exceedance

Odor was found in one of the District's groundwater sources at levels that exceeded the secondary MCL (SMCL) of 3 threshold odor units. The SMCL was set to protect you against unpleasant effects, such as color, taste, and odor. Exceeding the SMCL does not pose a health risk. The noted exceedance occurred at Well 20 at the sample location before filtration and chemical treatment. Regular sample testing however from the post treatment distribution system in that immediate area did not exceed the SMCL during 2017.

PPCPs and How to Dispose of Them

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although this seems convenient, these actions could threaten our water supply.

Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and house cleaning products. Many of these drugs and personal care products do not biodegrade and may persist in the environment for years.

The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go to www.Earth911.com to find more information about disposal locations in your area.

ABBREVIATIONS, DEFINITIONS, and NOTES

n/a = not applicable	NTU = Nephelometric Turbidity Units	ppb = parts per billion, or micrograms per liter (µg/L)	ppt = parts per trillion, or nanograms per liter (ng/L)
ND = None Detected	ppm = parts per million, or milligrams per liter (mg/L)	pCi/L = PicoCuries per Liter	NS = No Standard
gpg = Grains per Gallon	µS/cm = microSiemen per centimeter	RAL = Federal Regulatory Action Level	

Maximum Contaminant Level (MCL) = The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible.
Maximum Contaminant Level Goal (MCLG) = The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency.
Maximum Residual Disinfectant Level (MRDL) = The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial pathogens.
Maximum Residual Disinfectant Level Goal (MRDLG) = The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
Public Health Goal (PHG) = The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
Primary Drinking Water Standard = MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
Treatment Technique (TT) = A required process intended to reduce the level of a contaminant in drinking water.
Notification Level = The level at which notification of the public water system's governing body is required.

(a) The turbidity level of filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1.0 NTU at any time.
(b) Compliance for treatment plants that use ozone is based on a running annual average of monthly samples.
(c) Compliance is based on a running annual average of quarterly distribution system samples. Values reported reflect the highest and lowest single value in the distribution system (range) and the highest running annual average.
(d) MWD treats their water by adding fluoride to the naturally occurring level in order to help prevent dental caries in consumers. The fluoride levels in the treated water are maintained within a range of 0.7 - 1.3 ppm, as required by State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW). Formally known as the Department of Public Health, the DDW was created in 2014 when the drinking water program moved under the SWRCB.
(e) Aluminum has both Primary and Secondary standards.
(f) The monthly averages and ranges of turbidity shown in the secondary standards section are based on source elements.

Appendix D

Ventura County Waterworks District Nos. 1, 16, 17, and 19
Rules and Regulations (Part 1 only)

VENTURA COUNTY WATERWORKS DISTRICTS

RULES AND REGULATIONS
DISTRICTS NOS. 1,16,17,19 & 38

RULES AND REGULATIONS
VENTURA COUNTY WATERWORKS DISTRICT NOS. 1, 16, 17, 19 AND 38
TABLE OF CONTENTS

PART 1 - GENERAL CONDITIONS AND RULES

PART 1 - SECTION A - DEFINITION OF TERMS

The following terms shall have meanings as herein defined whenever references are made thereto.

RULE

1-A-1 **DISTRICT**: Any one of Ventura County Waterworks Districts Nos. 1, 16, 17, 19 and 38.

1-A-2 **BOARD**: The Board of Directors of the District, the members of which are the members of the Board of Supervisors of the County of Ventura.

1-A-3 **APPLICANT**: The person applying for water service.

1-A-4 **CUSTOMER**: The person of record receiving water service from the District.

1-A-5 **BILLING DATE:** The date upon which charges for services rendered by the District become effective and upon which a bill is generated.

1-A-5a **MAILING DATE**: The date upon which a water bill or notice is mailed to the customer, not to exceed three business days following the billing date.

1-A-6 **WATER SERVICES**: The services performed by the District including the following:

1-A-6a **DOMESTIC WATER SERVICE**: The service performed by the District in supplying water for domestic use, including use of water for household residential purposes, sprinkling lawns, irrigating small gardens and shrubbery, watering livestock, washing vehicles, and the ordinary use of water at residences and business or commercial establishments.

1-A-6b **AGRICULTURAL WATER SERVICE**: The water service provided for agricultural purposes only.

1-A-6c **PUBLIC WATER SERVICE**: The class of domestic service supplying water to any tax-exempt property.

1-A-6d **CONSTRUCTION WATER SERVICE**: The service supplying water for backfilling trenches, compaction, and other construction services.

1-A-6e **FIRE PROTECTION SERVICE**: The service performed by the District in supplying water for automatic fire sprinkling systems and maintaining water service at fire hydrant locations.

1-A-6f **METERED WATER SERVICE**: The service of supplying water through a meter which measures the quantity of water used.

1-A-6g **FLAT RATE WATER SERVICE**: The service of supplying unmetered water.

1-A-6h **ENGINEERING AND CONSTRUCTION SERVICES**: Those services performed by employees of the District or the County of Ventura in preparation of plans and specifications, checking the plans submitted by privately employed engineers for water systems proposed to be installed within the

District, inspecting the construction of water systems installed by private contractors, and installing water systems in the District paid for from fees or deposits paid for such purposes by private contractors, developers, customers or any other person.

1-A-7 **SCHEDULE OF RATES**: The schedule of rates, charges, and fees established and authorized by the Board of the District for the various types of services performed by the District. The Schedule of Rates shall be publicly posted and available by, at a minimum, posting on the website of the Water and Sanitation Department.

1-A-8 **PREMISES**: Property occupied or used by a customer to which water is being supplied by the District or for which water service has been requested.

1-A-9 **SERVICE CONNECTION or SERVICE LATERAL**: The pipe, valves, and other equipment installed in place, necessary for conducting water from the District's distribution mains to the meter or meter location, but does not include the meter or meter box.

1-A-10 **METERED SERVICE CONNECTION**: The service connection or service lateral including meter and meter box.

1-A-11 **WATER AND SANITATION DEPARTMENT**: The department of the Public Works Agency of the County of Ventura responsible for the operations, construction, repair, maintenance, budgets, and business of the District, under the direction of the following employees:

1-A-11a **MANAGER**: The employee of the Public Works Agency assigned to the Water and Sanitation Department to be in charge of the operations, repair, and maintenance of the District's facilities, or billing and administration, under the direction of the Director.

1-A-11b **DIRECTOR**: The employee of the Public Works Agency assigned to the Water and Sanitation Department to be in charge of the operations, budgets, construction, repair, maintenance, and business of the District.

1-A-12 **ENGINEER**: The Director of the Public Works Agency or his or her authorized representative.

1-A-13 **PUBLIC WAY**: Any street, alley, highway, or walk dedicated to public use.

1-A-14 **EASEMENT**: Public way or right-of-way which the District is authorized to use for pipeline or other purposes.

1-A-15 **PRIVATE EASEMENT**: An easement in which a customer or other person may have installed a water main for transportation of water furnished by the District, in which easement or pipeline the District has no interest or responsibility, or an easement in which the District may have installed a water line or distribution main, for the transportation or distribution of water to the public by the District, within which easement, the District is to have access at all time for reasons of repairs or maintenance.

1-A-16 **MAIN EXTENSIONS**: The extension of distribution pipelines beyond existing facilities, exclusive of service connections.

1-A-17 **INTERCONNECTION**: An authorized connection of the distribution system to the distribution system of another water service agency or water system.

1-A-18 **CROSS-CONNECTION**: An illegal piping connection or any connection which may cause contamination or backflow or back-siphonage.

1-A-19 **PERMANENT SERVICE CONNECTION**: A service connection intended to remain in use two years or more.

1-A-20 **TEMPORARY SERVICE CONNECTION**: A service connection requested for use for a period of less than two years.

1-A-21 **PRIVATE CONTRACT WORK**: Construction of water mains and related facilities by subdividers or other persons other than the District, within the District.

1-A-22 **AUTHORIZED PRIVATE CONTRACT WORK**: Private contract work authorized by the District.

1-A-23 **UNAUTHORIZED PRIVATE CONTRACT WORK**: Private contract work undertaken without authorization by the District.

1-A-24 **PRIVATE CONTRACTORS**: A person, not employed by the District or County of Ventura, engaged in the installation of water facilities within the service area of the District or within territory being considered for annexation thereto.

1-A-25 **PERSON**: Any natural person, firm, corporation, association, organization, partnership, business trust, limited liability company, company or other legal entity, or any district, city or other government unit.

1-A-26 **STRUCTURAL IMPROVEMENTS**: Both Capital Improvements and Local System Improvements, including, but not limited to, land, real estate, all classes of water mains, service connections, meter valves, hydrants, pumping plants, electrical systems, water treatment plants, and appurtenances.

1-A-27 **CAPITAL IMPROVEMENTS**: Those portions of the structural improvements of a District, the use of which is necessary to the services to, and shared in common by, all customers of the District and shall specifically include:

(a) Real estate and rights-of-way.

(b) Wells.

(c) Reservoirs.

(d) Pumping plants and all piping thereon.

(e) Water treatment plants.

(f) Water mains which are oversized at the request of the District.

(g) Local water system improvements undertaken by the District for the benefit of the existing customers.

(h) Pressure reducing stations and all piping thereon.

1-A-28 **LOCAL SYSTEM IMPROVEMENTS**: The following structural improvements are considered to be local system improvements:

(a) Service connections, fire hydrants, valves, fittings, blow-offs, air and vacuum release valves.

(b) All water mains used for distribution and transmission of water within the boundaries of the proposed development.

(c) In water mains used both for the transmission and distribution of water, that portion of the cost of a water main in commercial, industrial, and residential areas. The cost of the water main in areas other than commercial, industrial, and residential areas shall be classified as a Capital Improvement.

1-A-29 **CAPITAL IMPROVEMENT CHARGE**: The charge for equitable participation in the Capital Improvements of a District as a condition precedent to the supply of water to any residence, building, or parcel of land which has not theretofore been supplied with water by the District.

1-A-30 **RESIDENTIAL AREA**: Those land areas zoned R-1 and R-2 with the permitted use confined to family dwelling.

1-A-31 **COMMERCIAL AND MANUFACTURING AREA**: All zone classifications and permitted uses, except those within the definition of residential area.

1-A-32 **DISTRICT DIVISION DESIGNATION**: Specific areas of Ventura County Waterworks District No. 1 are designated divisions and zones as follows:

a) The former District No. 1 shall be designated as Division 1 of Ventura County Waterworks District No. 1.
b) The Improvement Zone No. 1 of former District No. 1 shall be designated as Improvement Zone No. 1 of Division 1 of Ventura County Waterworks District No. 1.
c) The Improvement Zone No. 2 of former District No. 1 shall be designated as Improvement Zone No. 2 of Division 1 of Ventura County Waterworks District No. 1.
d) The former District No. 11 shall be designated as Division 2 of Ventura County Waterworks District No. 1.

PART 1 - SECTION B - SERVICE AREA MAPS AND LEGAL DESCRIPTIONS

RULE

1-B-1 Maps and legal descriptions of service areas and special zones of the District shall be maintained in the office of the County Surveyor.

Although the boundaries of Ventura County Waterworks District No. 38 do not presently include the service area of the Lake Sherwood Mutual Water Company, District No. 38 and its predecessor water provider, Lake Sherwood Community Services District, have served this area since prior to January 1, 2001, and shall continue to serve this area pursuant to Government Code Section 56133, subdivision (e)(4), and Section E of this part shall not apply to

that portion of the Lake Sherwood Mutual Water Company service area outside the District's boundaries.

PART 1 - SECTION C - DESCRIPTION OF SERVICE

RULE

1-C-1 **WATER SUPPLY**:

The District will exercise reasonable diligence and care to:

(a) Deliver a continuous supply of water to the customer at reasonable pressure, and

(b) Avoid unnecessary shortages or interruption in the service.

The District shall not be liable for:

(a) Interruptions of service, shortage, or inadequacy of supply, or

(b) Any loss or damage caused thereby.

The District shall have the right to temporarily suspend service to any customer, whenever the District deems it necessary to do so, and the District shall not be liable for any loss or damage caused thereby. The causes for temporary suspension of service will be removed by the District without unnecessary delay and with the least inconvenience to the customer.

1-C-2 **WATER QUALITY**: Whenever domestic service is furnished, the District will endeavor to furnish at all times a safe and potable water supply.

1-C-3 **CUSTOMER AND WATER SERVICE CLASSIFICATIONS**: Water service provided by the District may be separated into the following customer and water service classifications for the purpose of establishing water rates:

(a) "Single Family Residential" – individually-metered single family homes, single unit condominiums, townhomes, or other similar dwellings, service to which may include water for household domestic purposes, sprinkling lawns, irrigating small gardens and shrubbery, washing vehicles, and the ordinary use of water at residences.

(b) "Agricultural" – a customer that receives water service to a parcel of land that uses water exclusively for the: (a) growing of crops for human consumption or commercial purposes; (b) raising of fowl or livestock for human consumption or commercial purposes; or (c) commercial breeding and training of horses for sale, including training for racing. Agricultural use excludes water used for commercial or non-commercial boarding or riding facilities, stables, equestrian centers, show arenas or event centers, or other similar facilities or operations.

For Ventura County Waterworks District No. 1, the serviced parcel of land must be at least five (5) acres. For Ventura County Waterworks District No. 19, the serviced parcel of land must be at least one (1) acre.

(c) "Non-Tiered Residential" or "Residential Association/Irrigation" – homeowner association common areas, pool areas, and other separately-metered residential irrigation areas.

(d) "Multi-Family Residential" – multiple residential dwellings through one meter, such as multiple single family residences on one parcel, apartment and condominium complexes, duplexes, and trailer parks.

(e) "Commercial" – an entity engaged in the selling of goods and services, such as retail establishments, restaurants, business offices, gas stations, etc.

(f) "Industrial" – an entity that is engaged in manufacturing, warehousing, or distributing products.

(g) "Temporary Construction" – service of a temporary, or non-permanent, nature to a person engaged in construction or similar building, landscaping, development, or improvement activities, including service through fire hydrant meters and truck load count accounts (the rate is converted to a "per 1,000 gallon rate"), or any other service being used for construction on a temporary basis.

(h) "Non-Residential" – refers to service to a customer in any of the following customer/service classifications: commercial, industrial, or institutional.

(i) "Private Fireline Service" – water service rendered for privately owned fire protection systems, including fire hydrants on private property.

(j) "Pump Charge" or "'Lift' Charge" – a charge, in an amount per 100 cubic feet of water usage based on the District's actual pumping costs to customers in service zones requiring water to be pumped up to a higher zone. If applicable, these pump or "lift" charges will be published in the District's Schedule of Rates.

PART 1 - SECTION D - APPLICATION FOR SERVICE

RULE

1-D-1 **APPLICATION FOR SERVICE**: Each applicant for water service will be required to sign a form provided by the District. The application will be regarded as merely a written request for service, and not binding upon the applicant to take service for a period of time longer than that upon which the rates and minimum charge of the selected rate schedule are based.

The application shall show the following information:

(a) **Name(s)** of applicant(s) responsible for the water bill payment. Two or more persons who join in one application for service shall be jointly and

severally liable for payment and shall be billed by means of a single periodic bill.

(b) **Service address** of the property where water is connected.

(c) **Billing/mailing address** if different than the service address.

(d) **Location** of proposed service, address, and brief property description.

(e) **Date** applicant desires service to begin.

(f) **Account** and service type.

(g) **Signature(s)** of applicant(s) acknowledging agreement to abide by all Rules and Regulations of the District and pay all bills when due.

(h) **Other** information the District may reasonably require.

1-D-2 **LARGE INCREASE IN USE OF WATER**: Customers making any change in operations on the customer's premises requiring substantial increases in the rates of water flow through the District's facilities shall immediately give the District written notice of the nature of the change.

PART 1 - SECTION E – OUTSIDE–OF-BOUNDARY SERVICE CONTRACTS

RULE

1-E-1 The District, at its discretion, may provide new or extended services by contract or agreement outside its jurisdictional boundaries as permitted by Government Code Section 56133 and other applicable law. Unless the contract or agreement expressly states otherwise, the District may, with or without cause, with or without advance notice, terminate any such contract or agreement and interrupt or cease any such new or extended services. Although not required to do so, to the extent circumstances reasonably allow, the District will provide advance notice before terminating any such contract or agreement or interrupting or ceasing any such new or extended services. The District's provision of any such new or extended services shall not, and shall not be deemed to, create any rights to continuing services. Water provided pursuant to any such contract or agreement shall be charged at the rates set forth in the District's Schedule of Rates.

PART 1 - SECTION F - BILLING NOTICES

RULE

1-F-1 **NOTICES TO CUSTOMERS**: Notices regarding discontinuance and restoration of water services shall be hand delivered to the customer at the customer's last known address. If the customer is not available, the notice may be placed on the customer's front door.

The substance of the Rules and Regulations addressing discontinuance and restoration of water service shall be printed on each bill.

PART 1 - SECTION G - NOTICES

RULE

1-G-1 **NOTICES TO CUSTOMERS**: Notice from the District to a customer normally will be given in writing delivered via the United States Postal Service to the customer's last known address. Where conditions warrant, and in emergencies, verbal notice or notice by telephone or electronic mail will be deemed adequate.

1-G-2 **NOTICES FROM CUSTOMERS**: Notice from the customer to the District may be given, by the customer or the customer's authorized representative, verbally or in writing, at the District's operating offices.

PART 1 - SECTION H - SERVICE RULES

RULE

1-H-1 **DOMESTIC SERVICE**: Each house or building under separate ownership must be provided with a separate service connection or connections. Two or more houses or buildings under one ownership and on the same lot or parcel of land may be supplied through one service connection, or a separate service connection may be installed for each building.

1-H-1a The District reserves the right to limit the number of houses or buildings, or the area of the land under one ownership, to be supplied by one service connection.

1-H-1b When property provided with a service connection is partitioned, the existing service connection, if any, shall be considered as being assigned to the lot or parcel of land nearest to the meter or service connection.

1-H-1c A service connection shall not be used to supply water to adjoining property of a different owner or property of the same owner on opposite sides of a public street or alley.

1-H-2 **AGRICULTURAL SERVICE CONNECTIONS**: In a District having agricultural water rates, the purposes of the water requirements of the parcel to be served shall guide the District in its determination of the proper sized meter to be installed. Water used for agricultural purposes shall be separately metered. Agricultural water service may be discontinued, with 30 days' notice, at the option of the District. An agricultural service connection shall not be used to supply adjoining properties.

1-H-2a The regulation by the customer of the flow of water from an agricultural meter must be effected by means of a valve installed on the outlet side of the meter, and the installation and maintenance of such a valve shall be at the customer's expense.

1-H-3 **AUTOMATIC FIRE SPRINKLER SERVICE CONNECTIONS**: When an automatic fire sprinkler service connection is installed, the control valve thereon will be left closed and sealed until a written order to turn on the water is received from the customer. After the water is turned on, the District shall not be liable for damages of any kind that may occur on or to the premises or property therein served due to the installation, maintenance, or use of such service connection, or because of fluctuation of pressure or interruption of water supply.

1-H-3a If water is used through an automatic fire sprinkler service connection for any purpose other than the extinguishing of fires, or a purpose related thereto, the District shall have the right either to place a meter on the automatic fire sprinkler service connection at the customer's expense, and to charge at metered rates for all water used, or to shut off the entire supply of water to the premises through such service connection.

1-H-3b The District shall have the right to install and connect with the automatic fire sprinkler service connection at the curb, a service connection for rendering any other type of water service to the same premises served by the automatic fire sprinkler service connection.

1-H-3c All automatic fire sprinkler service connections shall be equipped with a District-approved check valve detector device, all at the expense of the customer.

1-H-4 **TEMPORARY WATER SUPPLY**: Temporary water supply may be provided through:

(a) Temporary service connections or

(b) Fire hydrants.

Temporary water supply may be disconnected and/or terminated upon notification by the District.

Water obtained on a temporary basis shall be for use only within the service boundaries of the District. Any use of the water obtained on a temporary basis for use outside the boundaries of the District is subject to Government Code Section 56133.

1-H-5 **TEMPORARY SERVICE CONNECTIONS**: Temporary service connections will be disconnected and terminated within two years after installation unless an extension of time is granted by the District.

1-H-5a Where a regular service connection of adequate size is available, it may be used for temporary service so long as such connection is not required to supply the property which it enters, provided a temporary service connection number is assigned to it for identification during such usage. A charge, as shown in the District's Schedule of Rates, will be made for arranging temporary service. If such connection is at any time required to permanently serve the property which it enters, said temporary service there must be discontinued.

1-H-5b A charge for the installation of a temporary service connection shall be the same as for a regular service connection, as shown in the District's Schedule of Rates. The applicant shall deposit in cash the amount specified in the District's Schedule of Rates and shall be subject to an additional charge, or entitled to a credit, as provided herein.

1-H-5c After a temporary service connection is installed, and the District is requested by the applicant to terminate and remove the service, the cost of disconnecting and terminating the temporary service will then be estimated and added to the installation cost. From this total, the estimated salvage value of the material to be recovered will be deducted, leaving the final net estimated cost of the temporary service connection. If such net estimated cost is greater than the amount of the applicant's original charge, upon demand the applicant shall pay the District such additional sum as is required to make the applicant's aggregate payment equal to the final net estimated cost.

1-H-5d When a temporary service connection is disconnected and terminated within two years from the date of installation, the estimated cost of the disconnection and the present value of the material recovered shall be deducted from the deposit charge and the balance (if any) of such deposit shall be refunded to the customer if requested. If the aggregate deposit is less than the sum of the installation charge, the disconnection charge, and the present value of the material recovered, the amount of such deficiency shall be paid by the customer.

1-H-5e Where the construction of an installed temporary service connection conforms to the standard requirements of a permanent service connection installation, it may be designated as a permanent service connection at any time, provided all charges for permanent service at its location are paid; and the District will refund to the customer the difference in charges between the temporary service connection and permanent service connection, if the former charge was less than the latter. If the temporary service connection is not metered when it is converted into a regular permanent service connection, and the kind of permanent service to be rendered requires metering, the regular meter charge for the appropriate size of meter shall be paid by the customer.

1-H-5f The District reserves the right at any time to set a meter on any temporary service connection and to collect the required meter deposit, and thereafter to charge the regular metered rate for the kind of service to be rendered.

1-H-5g **METER CHARGE CREDITS**: If a metered temporary service connection is disconnected and terminated and the meter is recovered within one month after its installation, upon application, 95 percent of the meter charge, less $5.00, will be refunded; if within two months, 90 percent less $5.00; if within three months, 85 percent less $5.00; if within four months, 80 percent less $5.00; if within five months, 75 percent less $5.00; and if after five months and within two years, 70 percent less $5.00. All refunds of meter deposits shall be made to the customer, and no refund of a meter deposit shall be made if the temporary service connection is not terminated and the meter recovered within two years from its date of setting.

1-H-6 **TEMPORARY WATER SUPPLY FROM FIRE HYDRANTS**: Water may, on application, be obtained at rates determined by the Director from fire hydrants, for purposes other than extinguishing fires, in the manner prescribed as follows: When water is to be so procured from a fire hydrant, the applicant shall sign an application for a fire hydrant permit, wherein the applicant shall specify the location of the fire hydrant to be used and shall agree to pay the required cash deposit or charge therefor to the District. The applicant must at the same time deposit with the District a sum of money to secure payment of its charges for furnishing, installing, removing, inspecting, and renting of the equipment required to be installed on a fire hydrant for such procuring of water.

Water obtained on a temporary basis from a fire hydrant shall be for use only with the service boundaries of the District. Any use of water obtained on a temporary basis from a fire hydrant for use outside district boundaries is subject to Government Code Section 56133.

1-H-6a A minimum charge for the furnishing, installation, removal, inspection, and rental of such equipment on each fire hydrant shall be imposed pursuant to the District's Schedule of Rates.

1-H-6b If the equipment so furnished is damaged through carelessness or abuse, the cost of repairing the same shall constitute a charge against the customer. If any such equipment is removed from the fire hydrant other than by the District's employee and is not recovered by the District, the value thereof shall constitute a charge against the customer.

1-H-6c The fact that some fire hydrants are already equipped with auxiliary valves, or that some customers may desire to furnish their own equipment for installation on fire hydrants, shall not affect or vary this rule or in any way prevent or modify its application.

1-H-7 **SERVICE CONNECTION AND METER INSTALLATION CHARGES**: Where a charge is fixed herein for the installation of the service connection and/or meter, such charge shall be paid in advance by the applicant. Where no such charge is fixed, the District reserves the right to require the applicant to pay an amount as a fixed charge equal to the estimated cost of installation of such service connection and/or meter.

1-H-8 **SERVICE CONNECTION, SIZE, AND LOCATION**: The District reserves the right to determine the size of the service connection and its location in relation to boundaries of the premises to be served. Where possible, the customer's pipe to the curb should not be laid until the service connection is installed. In the event the customer's pipe is laid to the curb prior to the time the service connection is installed, and its location at the curb does not correspond with that of the service connection at the curb, then the customer must bear the additional cost of connecting the service connection pipe with the customer's pipe.

1-H-9 **EXTENSION OF SERVICE PIPE THROUGH BASEMENT WALL**: Where the applicant requires the service connection pipe to be extended through a

basement wall, the applicant shall, at the applicant's own expense, provide and seal the entrance way for such pipe and shall assume all responsibility for damage caused by leakage through such entrance way and/or by leaking pipes, fittings, or meters.

1-H-10 **SERVICE CONNECTION CURB STOP OR VALVE**: Every service connection installed by the District will be equipped with a curb stop or valve on the inlet side of the meter. Such valve or curb stop is intended for the exclusive use of the District in controlling the use of water through the service connection and/or meter. If such curb stop or valve is damaged by the customer to an extent requiring its replacement, the customer shall bear the cost for such replacement. The customer's pipe shall have a wheel valve placed at some known and accessible location between the meter and the building, to control the supply to the building.

1-H-11 **ENLARGING SERVICE CONNECTION AT TIME OF RENEWAL**: When the District replaces a service connection for any reason, such service connection may be enlarged, upon the customer's request and at the customer's expense, the District's estimated cost of which shall constitute a fixed charge.

1-H-12 **MAINTENANCE OF SERVICE CONNECTIONS, METERS, DETECTOR CHECK VALVES, AND HOUSINGS**: All service connections, water meters, detector check valves, and housings installed by the District shall be maintained at its expense, except as may be otherwise provided herein.

1-H-12a Where a two-inch, or larger, stub pipe is laid to the curb to replace one or more old service connections, such old service connection will be disconnected, and the District will lay, connect, and maintain the necessary piping from such new stub pipe to the old location of the meter or to the customer's supply pipe.

1-H-13 **CUTTING, REFITTING, RAISING, LOWERING, OR RELOCATING WATER SERVICE CONNECTIONS, MAINS, ETC.**: Any person making improvements or changes, including road repairs, resulting in the cutting, refitting, raising, lowering, relocating, or damaging in any way of service connections, water mains, fire hydrants, stub pipes, meters, valves, or other parts of the water system shall be liable to the District for all costs incurred by it in making such changes.

1-H-14 **INCREASING SIZE OF DETECTOR CHECK VALVE FOR AUTOMATIC FIRE SPRINKLER SERVICE**: In all cases in which a detector check valve on an installed service connection for automatic fire sprinkler service is recovered by the District because of the substitution of a larger detector check valve, the charge to the customer for furnishing and installing such larger detector check valve shall be the estimated cost of replacement, which estimate shall include a credit for the replaced equipment; and such credit shall be the present value.

1-H-14a **REFUND OF CHARGES FOR DETECTOR CHECK VALVE AND BY-PASS METER UPON DISCONNECTION AND ABANDONMENT OF AUTOMATIC FIRE SPRINKLER SERVICE CONNECTION**: When an automatic fire sprinkler service connection is disconnected and abandoned and the detector check valve and by-pass meter on such service connection are recovered by

the District, upon written application, a refund of the charge paid by the customer for such detector check valve and by-pass meter will be made in an amount equal to the present value as determined in Part 3 of these Rules and Regulations, less the estimated costs of removing the equipment.

1-H-15 **SETTING OF METERS**: The District may install all meters unless installation by another person is authorized by the District.

1-H-15a **OWNERSHIP OF METERS**: The District is the owner of all meters and appurtenances incidental thereto within the District.

1-H-15b **REMOVAL OF METERS FROM INACTIVE SERVICE CONNECTIONS**: The District may at its option remove the meter from any service connection determined to be inactive for more than two billing cycles, for maintenance or for use in another location. The District will reinstall the meter upon the customer's request. In the case of an inactive agricultural meter, if the customer requests discontinuation of service to avoid service charges, the District will remove the meter. However, reinstatement of service shall be at the discretion of the District.

1-H-16 **CHARGE FOR SUBSTITUTION OF LARGER METER FOR DOMESTIC SERVICE OR FOR COMBINED AGRICULTURAL AND DOMESTIC SERVICE**: When a meter for domestic service, or for combined agricultural and domestic service, of larger size than the existing meter is to be installed on an existing service connection, or when the existing service connection is disconnected and abandoned and the meter thereon is recovered by the District and a larger service connection and a larger meter are to be installed in the place thereof, the charge required for furnishing and setting such larger meter installation shall be the same as for a new service and meter, less the present value of the recoverable meter and fittings.

1-H-17 **SUBSTITUTION OF SMALLER METER TO REDUCE MONTHLY MINIMUM CHARGE**: When substitution of a smaller meter is requested by the customer in order to reduce the monthly minimum charge, and when the minimum charge is related to the meter size, such substitution will be made without charge, provided the delivery of water required through such smaller meter shall not exceed its rated capacity, and provided also that such capacity conforms with the requirements of the Plumbing Code. No credit for a large meter so removed will be allowed.

The allowable change in meter size shall not be less than one size smaller than the customer's piping, except that in no case shall the meter size be reduced below the size determined by application of rules in the Plumbing Code.

1-H-18 **DAMAGE TO METERS BY HOT WATER OR STEAM**: The District will furnish, set and maintain all meters.

1-H-18a When a customer becomes responsible for the payment of water bills for any premises served, the meter at that date installed or continued on the service connection is in this rule designated as the "first meter" and any other meter installed on the same service connection, to serve the same premises in

substitution for a meter damaged in service, is herein designated as "any substituted meter."

1-H-18b The District assumes the liability for the cost of changing and repairing any meter that shall have been damaged by hot water or steam emanating from the premises served in only the following cases:

1. When such damage occurs to the first meter;
2. When such damage occurs to any substituted meter more than three years after the same shall have been installed;
3. When such damage occurs to any substituted meter within three years after the same shall have been installed, and the customer as of the date such damage occurs has not been continuously so responsible for the same at all times since the date of the last previous occurrence of damage to a meter, for which the District assumes liability hereunder.

1-H-18c When the first meter is found to have been damaged by hot water or steam emanating from the premises served, notice of such damage will be mailed to the customer responsible for the payment of the water bills, but the customer will not be charged with the cost of changing or repairing the first meter.

1-H-18d If any substituted meter be similarly damaged (whether through the fault of such customer or otherwise) and such damage occurs within three years after the last previous meter installed on the same service connection and supplying the same premises was damaged, the cost of changing and repairing such substituted meter will be charged to the customer, provided such customer shall have been continuously so responsible at all times since the date of the last previous occurrence of damage to a meter, for which the District assumes liability hereunder.

1-H-18e When a meter is to be replaced, a notice will be left on the premises notifying the customer that the water will be or is being shut off for work on the water meter.

1-H-18f In the case of damage to a meter due to excessive flow onto the customer's premises, the customer shall supply the District, within five (5) working days of the District's request, the customer's maximum flow demand. If that demand is in excess of the meter's rating, the customer shall do one of the following at the District's system:

1. Install a larger meter or meter and service line, in accordance with charges established in the District's Schedule of Rates.
2. Approve the installation, by the District, of a device to limit the flow through the meter to its maximum amount.

1-H-19 **CHANGE OF METER LOCATION**: When the location of a meter and/or service is changed at the customer's request, the cost of making such change will be charged to the customer, in accordance with the District's Schedule of Rates.

NOTE: *When the customer requests such change of the location of a meter because of constructing a driveway that is to be paved, instead of moving the meter, a concrete box equipped with a steel cover plate to house the meter may be installed, provided the slope of such driveway is not such as to cause the face of the steel plate to be dangerous to pedestrians walking thereon.*

1-H-20 **APPLICATION FOR WATER SERVICE**: No charge will be made for the mere turning on of the water supply upon the opening of a new account for any kind of service. An application provided by the District must be signed by the applicant. Such application shall contain the following provisions:

1. The applicant shall agree to accept the services applied for subject to these Rules and Regulations and to pay for the services at regular rates. Should the applicant subsequently cancel one or more items of service, such cancellation shall not change or affect the terms of the applicant's application in respect to the remaining item or items of service.

2. The applicant shall also agree to give at least twenty-four hours' notice to the District before service is to be discontinued. The provisions of the application, obligating the applicant to accept and pay for service, shall remain in force until said notice is given and all bills shall be paid in full to date of receipt of said notice by the District.

3. The applicant shall further agree to assume all liability for any damage occurring on the premises served, by reason of open faucets, faulty fixtures, or broken pipes on such premises at or after the time when service is turned on, whether or not at that time there is any responsible person on the premises.

1-H-21 **USE OF WATER WITHOUT REGULAR APPLICATION FOR SERVICE**: Any person taking possession of premises where the water supply has been shut off and the curb cock or valve sealed must make proper application to the District to have the water supply turned on. In the event the person turns on the water supply or suffers or causes it to be turned on, without first having made such application, the person will be held liable for all charges for the water service rendered, the amount thereof to be determined, at the election of the District, either by the meter reading or on the basis of the estimated consumption for the length of time service was received without proper application.

1-H-21a **TAMPERING OR TURNING ON WATER**: Tampering with a water meter or the turning on of water at a water meter without District consent is a violation of these Rules and Regulations and Penal Code Section 498 and constitutes a misdemeanor. Any person who tampers with a District meter or water supply is subject to a fine, plus costs of all repairs, labor and damages to District property. When the District finds that water is being used without proper application, the customer or other person will be notified, and if application for such service is not made promptly thereafter and the District immediately compensated for water already used, the supply will be shut off without further notice.

1-H-22 **DISCONTINUANCE OF WATER SERVICE**: No charge will be made for shutting off water supply or for reading the meter upon closing the account.

1-H-22a When a customer makes application for water service for specified premises, the customer will be charged for water service on such premises until the customer requests the service to such premises be discontinued.

1-H-23 **READING OF METER AND BILLING**: Under ordinary conditions, each continuous service meter will be read monthly on approximately 28 to 35 days for one billing cycle to the next and a bill thereupon rendered, showing the period covered by the meter reading, or the amount of water used, and the total charge for the service rendered. Fire service meters may, at the option of the District, be read semi-annually or annually. However, monthly bills shall be rendered for the monthly fire service charge. Notice may be given by the District if large or unusual meter registration. The customer is responsible for paying all water that passes through the meter.

1-H-23a Where the meter is found to be out of order, or when a meter reading cannot be obtained, the charge for water will be based, at the option of the District, on an estimated meter reading. Such estimates may be computer generated based on previous usage for the property or on the consumption as registered by a substituted new meter. Consideration may also be given to the average monthly consumption adjusted to seasonal demand for the current billing period. Consideration may also be given to volume of business, seasonal demand, and other factors that may assist in determining an equitable charge.

1-H-23b When the meter is temporarily covered by building or other material, or when a mobile construction meter has been moved to a new location without the District's knowledge, so that it cannot be read, the charge for water will be based, at the option of the District, on estimated water usage. Such estimates may be computer generated based on previous usage for the property, and a bill or series of bills for the billing period, will be rendered. Estimated water usage may be adjusted if necessary when the meter is first thereafter read. The District may notify the customer of the inaccessibility of the meter and may charge the applicable fee for the notice as specified in the District's Schedule of Rates.

1-H-23c When the water meter or water lines within a private easement are not accessible to the District due to locked gates, fences, livestock, dogs, or any other condition for more than 60 days, the District will, at its option:

1. Remove the meter and/or terminate service until the inaccessibility is eliminated. Notice of the District's intent to do so will be given to the customer after the first incident of inaccessibility.
2. If the water meter and/or the water lines within a private easement remain inaccessible or their location inhibits or excludes District access, the water meter and/or water lines may be relocated at the determination of the District, and all relocation costs, including, but not limited to, materials and labor, will be billed to the customer.

1-H-24 **PAYMENT OF WATER BILLS**: All bills for service and other charges for which payment is not otherwise provided in these Rules and Regulations shall be due and payable in cash, by check, or by automatic payment, upon presentation, and shall become delinquent 22 days from the bill date but no less than nineteen (19) days after mailing.

The District may, at its option, accept alternative payment methods for water bills, including credit card payments, electronic fund transfers, or other methods.

The Director or the Director's authorized representative, in his or her sole discretion, may make adjustments, extend due dates, or waive charges resulting from meter read errors or other discrepancies, delinquent or shut-off notices, or other miscellaneous services.

1-H-24a All bills for fire hydrant service, for sewer flushing service, for water for street washing and/or sprinkling, or for water for flushing storm drains, culverts, etc., shall be rendered either monthly or bi-monthly and shall become delinquent nineteen (19) days after mailing.

1-H-24b If any bill becomes delinquent, the water service may be discontinued with notice.

1-H-24c Water bills may be addressed in the name of the property owner or other person in possession of the property served or in the name of the applicant for water service.

1-H-24d If more than one tenant on a parcel of property is served through a single meter, the District will render a single bill to the property owner or applicant, and include a minimum charge for water service based upon the number of billing units, the number of which may be determined by any of the following methods:

1. The number of tenant units: Each house, apartment, store, trailer space, hotel room, or motel unit with water piping shall be considered a separate tenant unit for the purpose of computing a minimum charge as specified in Part 2 of these Rules and Regulations.

2. Meter size as specified in Part 2 of these Rules and Regulations.

1-H-24e The form of the bill shall be prescribed by the District.

1-H-24f Payments made to the customer's account will be applied to the customer's account balance, which may include a deposit due, water charges, sewer charges, lift charges, penalty/late fees, and other miscellaneous charges. If the balance is not paid within 22 days from the bill date (the "due date"), the account will be charged with a penalty/late fee, and a past due bill and a "Delinquent Notice" will be issued.

At the option of the Director, the District may allow a grace period of one to six days past the delinquent date prior to charging a penalty/late fee. The amount of such penalty/late fee shall be as specified in the District's

Schedule of Rates. At the option of the District the Delinquent Notice may be incorporated into the next regular bill for service, provided current and past due charges are so specified.

Fifteen days from the date of the Delinquent Notice, if payment still has not been received, water service may be discontinued upon notification to the customer. At least 48 hours prior to termination of service, the District shall attempt to notify the customer by telephone, mail, or delivery of a door hanger notice to the service location. At the option of the District, telephone notification may be made through the use of an interactive voice response (IVR) system. A "48-Hour Notice of Pending Shut-Off" charge in the amount specified in the District's Schedule of Rates will be added to the customer's account to process the notice. The customer shall be subject to the 48-Hour Notice of Pending Shut-Off charge upon preparation of the door hanger notice by the District.

If payment is not made by the end of the period stated in the 48-Hour Notice of Pending Shut-Off, a shut-off notice will be printed for delivery and a charge will be added to the delinquent account in the amount specified in the District's Schedule of Rates. If resumption of service is requested for other than regular working days or hours, payment of an additional "Service Turn-on After Business Hours" fee will be charged in the amount specified in the District's Schedule of Rates.

1-H-24g In the event of underpayment of any water bill, where alternate payment arrangements have not been approved in accordance with this rule, such underpayment may be treated as non-payment. Where the amount of such underpayment exceeds fifty percent of the total amount of the bill, the remaining balance of said bill may become a charge upon the next ensuing water bill issued to the same customer, at the option of the District.

1-H-24h An adjustment shall be made to water billing charges when subsequent meter readings show that the meter was previously read in error. Also, upon the customer-verified statement, a correction may be made as to previous opening or closing billing dates.

1-H-24i In the event of payment in excess of the billed amount, the District shall credit the amount of over-payment thereof upon the next ensuing water bill issued to the same property.

1-H-24j In the event a customer is unable to pay a water bill, the customer may contact the District's billing office and request an alternate payment plan subject to approval by the Director or his or her authorized representative. Such arrangements for payment must be made before the shut-off date to avoid the shut-off notice charge. If a customer fails to pay a subsequent bill by the shut-off date, service may be discontinued upon notification to the customer. At the option of the District, the District may limit the number of approved payment extensions to no more than one per customer per year.

1-H-24k At the option of the Director, the District may apply a penalty/late fee to closing bill balances not paid within 22 days from the closing bill date.

1-H-25 **SHUTTING OFF WATER SUPPLY FOR EMERGENCY REPAIRS OR FOR CHANGES, ETC., IN OR AFFECTING THE DISTRIBUTION SYSTEM**: The District reserves the right at any and all times to shut off the water for the repairing, extending, or altering of water mains, the repairing and placing of fire hydrants, the repairing and renewing of water service connections, or the changing and testing of water meters or detector check valves.

1-H-26 When the water supply is to be shut off for any of the above reasons, the District will make a reasonable effort to deliver a notice of the shut-off to the customer or to some responsible person on the premises, but it does not assume any liability for the failure of the customer to receive or to understand such notice.

1-H-26a The District will not be responsible for the maintenance of pressure, nor for the continuity of water supply, and customers dependent upon a continuous water supply should provide adequate storage for emergencies. Customers having water heaters or other devices requiring a continuous water supply should take all necessary steps to prevent damage to, or the causing of injury by, such devices as a result of the shutting off of the water supply.

1-H-26b The District shall not be responsible for water pressures for any customers located at high elevation beyond normal District water pressures. Nor is the District obligated to extend water services to those areas beyond existing District water mains and/or off the public rights-of-way.

1-H-26c Credit forward balances for water service normally due to a former customer shall not be credited to the account of the new customer at the same service address. Said credit balances shall be refunded to the former customer when a forwarding address is available. When there is not a forwarding address available, said credit balances shall be deposited in the District's applicable water sales trust fund and shall be refunded to the former customer upon written request to the District. If no such request is submitted within one year, the credit forward balance shall be credited to the District's General Fund.

1-H-27 **LEAKING PIPES OR FIXTURES ON THE PREMISES SERVED:** The District's control and responsibility ends at the curb shut-off or meter, and the District will in no case be liable for damage caused by, or in any way arising out of, the running or escape of water from open faucets, burst pipes, or faulty fixtures on the premises.

1-H-27a **CUSTOMER RESPONSIBILITIES**: All piping and appurtenances installed by the customer on the customer's premises shall remain the property of the customer and the maintenance thereof shall be the customer's sole responsibility. Water provided to the property, on the customer's side of the meter, including water from leaks, must be paid for by the customer. The District's control and responsibility shall end at the customer's side of the meter. The District shall in no case be liable for damages caused by, or in any way arising out of, the running or escape of water from open faucets, burst pipes, or faulty fixtures on the premises.

1-H-27b When it becomes necessary to shut off the water supply to the entire premises, the customer may use the customer hand valve within the meter box on the customer side of the meter, if one has been installed. Upon request, for emergency purposes, the District may, without charge, shut off its control valve on the inlet side of the meter with the understanding that the District will turn on the water after repairs have been made.

1-H-27c Every service connection is equipped with a control valve on the inlet side of the meter which may be used by the customer when necessary to shut off the water supply from the entire premises. Upon request, day or night, the District will, without charge, shut off such control valve for emergency purposes, upon the understanding that the customer will turn on the water after repairs shall have been made.

NOTE: *For convenience and safety, the water pipe on the customer's premises shall be equipped with a wheel valve, placed at some known accessible location between the meter and the building.*

1-H-28 **TAMPERING WITH DISTRICT PROPERTY**: Except as provided elsewhere in this rule, no person, other than an authorized District employee, shall at any time or in any manner operate, or cause to be operated, any valve in or connected with a water main, service connection, or fire hydrant, or tamper or otherwise interfere with any water meter, detector check valve, or other part of the water system. No person shall deposit, or cause to be deposited, any substance or liquid in any water main or pipe of the District, or do anything which might cause any water supplied or furnished by, or belonging to, the District to become polluted, or take water from any service without first securing permission from the District.

1-H-28a In the event a person for any reason damages an angle meter valve or valve controlling a water supply, or damages a meter cover or its center piece, or causes any such act to be done, such person will be held liable for such damage.

1-H-28b The District may impose a fine of up to $250.00, plus the cost of labor and materials to repair any damages, against any person found to be tampering with District property or engaged in the unauthorized operation of any part of the water system.

1-H-29 **RIGHT OF INSPECTION OF AND ACCESS TO CUSTOMER'S PREMISES**:

By accepting service from the District, the customer agrees that authorized agents and employees of the District shall have the right of entry and access, at all reasonable times, in, to and upon the customer's buildings, grounds or premises, or any part thereof (including any and all plumbing, water piping, fixtures, or connections located, used, maintained or operated therein or thereon), for the purposes of:

1) Reading of meters and/or repairs and maintenance to the meter or water system.
2) Determining the existence, operation, and/or use in, on, or about such buildings, grounds, or premises for:
   a. Any plumbing or water piping which may now or hereafter cause, create, or permit backflow, back-siphonage, or any other condition affecting or likely to affect the purity and/or potability of the water supply furnished by the District.
   b. Any source such as hot water which could damage District equipment such as meters.
   c. Any source of water supply which may now or hereafter be connected with the water supply system of the District.
   d. Any source of pressure, vacuum, contamination or pollution (including any and all equipment, fixtures or appliances connected or used therewith or therefor) affecting or likely to affect the purity and/or potability of the water supply of the District.
3) Facilitating the enforcement, from time to time, of any and all applicable laws and Rules and Regulations of the District.

1-H-29a Such authorized representatives of the District shall be furnished with and upon the request of any customer shall display, appropriate identification.

1-H-29b If the District shall ascertain that a condition affecting the purity and potability of the water supply in any District exists in, on, or about any building, grounds, or premises in violation of any law, rule or regulation of this State, or any ordinance of the County of Ventura, or any of these Rules and Regulations, the District shall:

1. Immediately notify the person owning and/or controlling such building, grounds, or premises of the existence of such condition; and

2. Require of such person compliance within a reasonable time (to be stated in said notice) with any such law, ordinance, rule or regulation so violated; and

3. Further notify the person that, for the failure to so comply within said described period, the District will take, or cause to be taken, by the appropriate authority, such steps to enforce such compliance, to remedy such condition, and/or to protect the interests of the District, as shall be provided by law or by these Rules and Regulations.

1-H-30 **EASEMENTS**: The customer shall be responsible for maintaining public utility easements within the customer's property such that the District has access at all times to the public utility systems within the easements. No permanent improvements such as buildings, block walls, iron fences, large trees and shrubs and the like shall be placed over the easement without prior written approval from the District. Where the District must perform maintenance and/or construction activity within the easement, it shall not be responsible for replacing said permanent improvements or other prohibited structures. The District must have access to the public utility systems within any easement at all times.

1-H-31 **PROHIBITION OF CROSS-CONNECTIONS**: No physical connection shall hereafter exist or be installed, located, maintained, or operated between the water supply system of any District (including its appurtenant mains, pipes, fixtures, equipment, or appliances), and any other supply system or any sewer or grading system, or any steam, gas, or chemical line, pipe, or conduit, or any device, boiler, tank, or container whereby any contamination or pollution or any dangerous, impure, unsanitary, or unpotable substance (solid, liquid, or gaseous, or any combination thereof) may now or hereafter be introduced to any portion of the water supply system of the District by backflow, back-siphonage, or any other method, means, or cause whatsoever.

1-H-31a Wherever a mechanical or other method or device (approved by the District) may be used for protecting the District's water supply system from any such source of contamination or pollution, any customer shall at the customer's own expense and subject to the final inspection and approval thereof by a person certified for such inspection and repair by the County of Ventura Health Officer, install, maintain, operate, and use the same. Maintenance shall include inspections and operational tests once a year, or more often as required by the Engineer and/or County of Ventura Health Officer.

1-H-31b The District shall promulgate and shall, upon request, furnish copies to the customer of lists of approved mechanical devices and information concerning the installation of said devices.

1-H-31c The District shall have the right to discontinue the supply of water to, and to seal or disconnect the services to, the premises of the customer for the customer's failure to comply with, or the violation or infraction of, any of these Rules and Regulations relative to the inspection of the customer's premises for, to the prohibition of, or to the protection of the District's water supply against cross-connections, backflow, or back-siphonage. A customer shall be entitled to reasonable notice of the intent of the District to discontinue the service for the customer's noncompliance with, or violation of, any of such Rules and Regulations, and to a reasonable opportunity to comply with and/or to cease the violation thereof. However, no such notice or opportunity to comply with, or to cease a violation of, any of such Rules and Regulations need be given in those instances in which non-compliance or violation by the customer has created, is creating or is likely to create in the water supply

system conditions dangerous and detrimental to public health, safety, and welfare.

1-H-32 In the event that the customer is unable to obtain qualified private inspection services, the District will furnish competent inspection and/or repair service at the rates set forth in the District's Schedule of Rates.

PART 1 - SECTION I – CROSS-CONNECTION CONTROL AND BACKFLOW PREVENTION

RULE

1-I-1 **GENERAL POLICY**: The regulations of the Department of Public Health of the State, contained in Title 17 of the California Code of Regulations, the standards of the Uniform Plumbing Code, American Water Works Association Standard M14, and the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research Manual of Cross-Connection Control (10th ed.) are applicable for cross-connection control and backflow prevention in the District.

1-I-2 **DISTRICT REGULATIONS FOR CROSS-CONNECTION CONTROL AND BACKFLOW PREVENTION**

1-I-2a **GENERAL**: No water service connection to any premises will be installed or maintained by the District unless the water supply is protected as required by State laws and these Rules and Regulations. Service of water to any premises shall be discontinued by the District if a backflow prevention assembly required by these Rules and Regulations is not installed, tested and maintained, or if it is found that a backflow prevention assembly has been removed or bypassed, or if an unprotected cross-connection exists on the premises. Service will not be restored until such conditions or defects are corrected. The customer's system should be open for inspection at all reasonable times to authorized representatives of the District to determine whether cross-connections or other structural or sanitary hazards, including violations of these Rules and Regulations, exist. When such a condition becomes known, the District shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with the State laws relating to plumbing and water supplies and the regulations adopted pursuant thereto and these Rules and Regulations.

1-I-2b All existing backflow prevention assemblies that do not meet the requirements in these Rules and Regulations but were approved devices for the purposes described in these Rules and Regulations this section, be excluded from the requirements of these Rules and Regulations so long as the District is assured that they will satisfactorily protect the utility system. Whenever the existing device is moved from the present location or requires more than minimum maintenance (e.g., no replacement parts required) or when the District finds that the maintenance constitutes a hazard to health, the unit shall be replaced by an approved backflow prevention assembly meeting the requirements of these Rules and Regulations.

1-I-2c **WHEN BACKFLOW PREVENTION IS REQUIRED**:

1. In the case of premises having an auxiliary water supply which is not or may not be of safe bacteriological or chemical quality and which is not acceptable as an additional source by the District, the public water system shall be protected against backflow from the premises (i.e., irrigation services).

2 In the case of premises on which any industrial fluid or any other objectionable substance is handled in such a fashion as to create an actual or potential hazard to the public water system, the public system shall be protected against backflow from the premises. This shall include the handling of process waters and waters originating from the utility system which have been subject to deterioration in quality.

3. In the case of premises having (1) a cross-connection that cannot be permanently corrected or controlled or (2) intricate plumbing and piping arrangements or where entry to all portions of the premises is not readily accessible for inspection purposes, making it impracticable or impossible to ascertain whether or not dangerous cross-connections exist, the public water system shall be protected against backflow from the premises.

4. In the case of premises having industrial or commercial facilities, the public water system shall be protected against backflow from the premises.

1-I-3 **ACCEPTABLE BACKFLOW PREVENTION ASSEMBLIES**: The District will not accept any backflow prevention assembly for cross-connection protection other than an approved air gap separation or a reduced pressure principle backflow prevention assembly unless otherwise approved by the District. An exception will be the installation of an approved double detector check valve assembly on fire lines for sprinklered buildings or on private fire hydrant lines.

1-I-4 **REDUCED PRESSURE PRINCIPLE DEVICE (RP)**: Commonly referred to as an RP or RPP, this device consists of two independently acting check valves, together with an automatically operating pressure differential relief valve located between the two check valves. The first check valve reduces the supply pressure at a predetermined amount so that during normal flow, and at cessation of normal flow, the pressure between the two check valves shall be lower than the supply pressure. If either check valve leaks, the relief valve will discharge to the atmosphere. This will maintain the pressure in the zone between the two check valves lower than the supply pressure. The unit also has two shut-off valves (one upstream and one downstream of the checks) and properly located test cocks for field testing.

1-I-4a **INSTALLATION**: An approved RP assembly, the same size as the water meter, shall be installed on the customer water line as close as practical to the meter (not to exceed 10 feet unless otherwise approved by the District). Unprotected outlets shall not be installed between the meter and the RP device. This unit shall be installed a minimum of 18 inches and not more than 36 inches above finish grade with a minimum of 12 inches of side clearance. The unit shall not be installed in an enclosed structure.

1-I-4b **APPROVED RP DEVICES**: Any backflow prevention assembly required herein shall be a model approved by the District. The term "Approved Backflow Prevention Assembly" shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association (AWWA) entitled AWWA C506-84 Standards for Reduced Pressure Principle and Double Check Valve Backflow Prevention Devices and has met completely the laboratory and field performance specifications as set forth in Chapter 10, Specifications of Backflow Prevention Assemblies, of the Manual of Cross-Connection Control (10th ed.) of the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR).

Final approval shall be evidenced by a "Certificate of Approval" issued by an approved testing laboratory certifying full compliance with the said AWWA standards and FCCCHR specifications.

The following testing laboratory has been qualified by the District to test and certify backflow preventers:

Foundation for Cross-Connection Control and Hydraulic Research
University of Southern California
University Park
Los Angeles, California 90089-0231

Testing laboratories other than the laboratory listed above will be added to an approved list as they are qualified by the District.

The list of approved RP assemblies is issued and maintained by the Ventura County Environmental Health Division. The District should be consulted for the currently approved list.

1-I-4c **TESTING**: It shall be the duty of the customer at any premises where the backflow prevention assemblies are installed to have certified inspections and operational tests made at least once per year. Where the District deems the potential hazard of backflow to be significant, certified inspections at more frequent intervals may be required. These inspections and tests shall be performed by a certified tester approved by the District. It shall be the duty of the District to see that these tests are made in a timely manner. The customer shall notify the District in advance when the tests are to be undertaken so that an official representative of the District may witness the tests. These assemblies shall be repaired, overhauled or replaced at the expense of the customer whenever said assemblies are found to be defective. Records of such tests, repairs and overhaul shall be kept by the customer and made available to the District upon request.

1-I-5 **AIR GAP**: An air gap is a physical separation between the free flowing discharge end of a potable pipe line and an open or non-pressure receiving vessel. To have an acceptable air gap, the end of the discharge pipe has to be at least twice the diameter of the pipe above the topmost rim of the receiving vessel, but in no case can this distance be less than one inch.

PART 1 – SECTION J - CAPITAL IMPROVEMENT CHARGES AND LOCAL SYSTEM IMPROVEMENT CHARGES

RULE

1-J-1 **CHARGES**: As a condition precedent to receiving water service for any residence or building or parcel of land which has not theretofore been supplied with water by the District, there shall be paid to the District a Capital Improvement Charge in accord with the District's Schedule of Rates, except as defined in this section. The Capital Improvement Charge shall not include charges for service and meter connections, which charges shall be paid separately as required elsewhere in these Rules and Regulations.

1-J-2 **AGRICULTURAL SERVICE**: In the case where water service is requested for any land and/or parcel for agricultural purposes only and the District has facilities available or no expenditure of District funds is required to provide such service, the District may, at its option, waive payment of the Capital Improvement Charge. However, the Capital Improvement Charge shall be paid prior to development of the property for a use other than agricultural.

1-J-3 **SERVICE TO USERS OUTSIDE DISTRICT**: The furnishing of water to any residence, building or parcel of land outside the District's jurisdictional boundaries pursuant to Section E of this part shall not excuse such residence, building or parcel of land from the requirements of this section in the event such parcel of land, or any land on which any such residence or building is located, is annexed to the District. In such event, the payment of a Capital Improvement Charge shall be a condition precedent to the continuation of water service to such residence, building or parcel of land.

1-J-4 **TIME OF PAYMENT**: The Capital Improvement Charge shall be paid in full prior to issuance of a water will serve letter, and/or prior to the commencement of any work necessary to furnish water to any residence, building or parcel.

However, in a case where a person owns a parcel of land larger than ten acres in size but desires water service for only a small portion thereof, and if the District is financially able to do so, it may, at its option, collect the Capital Improvement Charge for only that portion of the parcel that is to be developed. At such time as further development of the parcel occurs, the then applicable Capital Improvement Charge shall be paid for the remainder.

1-J-5 **CONTRIBUTIONS AND GRANTS OF CAPITAL IMPROVEMENTS**: In an amount agreed upon by the grantor and the District all or any part of one or more Capital Improvement Charges may be reduced by deducting therefrom the actual cost of any Capital Improvement, or the fair market value of any real property, contributed or given to the District and expressly accepted by the District in lieu of all or part of the Capital Improvement Charge due upon any residence or building.

1-J-6 **IMPROVEMENT ZONE**: Capital Improvement Charges shall not be collected by the District for ministerial development on existing parcels whenever an improvement zone has been established and local and Capital Improvements have been or are to be financed by the proceeds of bonds issued as special obligations of said zone. The term improvement zone shall refer to any area within a District which has been set up pursuant to Water Code Section 55650 to provide for financing of facilities and improvements of benefit to such zone that are not of District-wide benefit.

All parcels requesting discretionary land use entitlements shall be assessed Capital Improvement Charges according to these Rules and Regulations.

Whenever the ownership of any property within such improvement zone is held or acquired by a non-taxable entity, such entity shall be subject to meter and Capital Improvement Charges. The amount of such Capital Improvement Charge shall be determined by the Director and shall be calculated in such a manner as to include only those costs of Capital Improvements which are required to provide adequate service for such non-taxable entity. In no event shall said Capital Improvement Charge exceed that charged non-taxable entities for lands located within the District but not within an improvement zone.

1-J-6a **EXCEPTION TO CAPITAL IMPROVEMENT CHARGES**: Capital Improvement Charges shall not be collected by the District for the lots developed by LSR, the developer of Lake Sherwood Community or the customers served by the Lake Sherwood Mutual Water Company, at the time of adoption of these Rules and Regulations.

If in the event a special assessment district is formed in any District for the purpose of paying for the cost of constructing water system improvements, including improvements to existing vacant lots, Capital Improvement Charges will not apply.

1-J-7 **MAIN EXTENSIONS**: Upon payment of Capital Improvement Charges, the District will extend water lines from its facilities which exist in a publicly dedicated and accepted road nearest the lot, parcel or building to be served to a point along such publicly dedicated and accepted road nearest the lot, parcel or building to be served. However, the District shall not be required to provide water service where the cost of providing such service would cause an undue financial hardship on the District as determined by the District Board.

1-J-8 **OFF-SITE CONSTRUCTION**: The developer of any lot, parcel or building shall extend pipelines to the District's facilities to provide the necessary service. Said improvements shall be as required by the District in accord with the District's specifications and subject to the approval and acceptance of the District. Upon completion, said improvements shall be conveyed to the District together with an adequate easement for their installation, operation and maintenance.

1-J-9 **LOCAL SYSTEM IMPROVEMENTS AND CHARGES**: As a condition precedent to receiving water service for any residence, or building or parcel of land which has not theretofore been supplied with water by the District, all necessary Local System Improvements shall be furnished and installed by the applicant at the applicant's expense or the applicant shall be charged for said improvements and pay the District the cost thereof computed at the rates described in the District's Schedule of Rates or as computed by the Director. Said improvements shall be as required by the District, in accord with the District's specifications and subject to the approval and acceptance of the District. Upon completion, said improvements shall be conveyed to the District together with an adequate easement for their installation, operation and maintenance.

1-J-10 **LOCAL SYSTEM IMPROVEMENTS WITHIN IMPROVEMENT ZONE**: Local System Improvements within an improvement zone shall be financed as provided for in the petition or resolution to form the improvement zone as approved pursuant to applicable law.

PART 1 - SECTION K - WATER SHORTAGES

RULE

1-K-1 **EMERGENCY RESTRICTIONS ON WATER USE**

1-K-1a **EMERGENCY RESTRICTIONS ON WATER USE DUE TO SYSTEM EMERGENCIES**: If the Director determines that over-consumption of water, loss of pressure in a system, breakdown, or any similar occurrence requires emergency restrictions upon the use of water from any system, the Director shall order such restrictions as the Director in his or her sole discretion deems appropriate under the circumstances.

Such order may restrict the use of water for sprinkling, manufacturing, or nonessential uses. The use of water for particular purposes may be limited to specified days or hours of a day or altogether prohibited, except that the use of water for drinking, cooking, and sanitary purposes shall not be prohibited.

Notice of any such order shall be given, either in writing or orally when possible, to customers served by the affected system. Water supply to any premises upon which the use of water is being made in violation of such order may be summarily shut off.

When the Director determines that the emergency no longer exists, the Director shall, by further order, rescind the restrictions previously ordered. Notice of such order shall be given to customers in the same manner in which the order imposing the restrictions was given.

1-K-1b **EMERGENCY RESTRICTIONS ON WATER USE DUE TO OTHER THAN SYSTEM EMERGENCIES**: If the Engineer determines that circumstances other than those specified elsewhere in this section (such as natural disaster, epidemic, accident, war, other violent activity, labor dispute, civil disturbance or state or federal statute or executive or judicial order) require emergency restrictions upon the use of water from any system, the Engineer shall order such restrictions as the Engineer in his or her sole discretion deems appropriate under the circumstances, and then shall obtain ratification of the order from the District's Board at its first meeting following such restriction order.

Such order may restrict the use of water for sprinkling, manufacturing, or nonessential uses. The use of water for particular purposes may be limited to specified days or hours of a day or altogether prohibited, except that the use of water for drinking, cooking, and sanitary purposes shall not be prohibited.

Notice of any such order shall be given, either in writing or orally when possible, to customers served by the affected system. Water supply to any premises upon which the use of water is being made in violation of such order may be summarily shut off.

When the Engineer determines that the emergency no longer exists, the Engineer shall, by further order, rescind the restrictions previously ordered. Notice of such order shall be given to customers in the same manner in which the order imposing the restrictions was given.

1-K-2 **LEVEL 1 WATER SUPPLY SHORTAGE**:

1-K-2a A Level 1 Water Supply Shortage exists when the Engineer determines in his or her sole discretion that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the Engineer of a Level 1 Water Supply Shortage condition, the Director shall implement the mandatory Level 1 conservation measures identified in this section, effective on the date determined by the Director.

1-K-2b In addition to the prohibited uses of water identified in Section L of this part, the following water conservation measures apply during a declared Level 1 Water Supply Shortage:

(i) Exterior Water Use: The District will establish allocations and water rates to achieve the desired reduction in exterior water use.

1-K-3 **LEVEL 2 WATER SUPPLY SHORTAGE**:

1-K-3a A Level 2 Water Supply Shortage exists when the Engineer determines in his or her sole discretion that due to drought or other water supply conditions, a water supply shortage or threatened shortage exists, and a consumer demand reduction is necessary to make more efficient use of water and appropriately respond to existing water conditions. Upon the declaration by the Engineer of a Level 2 Water Supply Shortage condition, the Director shall implement the mandatory Level 2 conservation measures identified in this section, effective on the date determined by the Director.

1-K-3b In addition to the prohibited uses of water identified in Rule 1-K-2 of Section K of this part and Section L of this part, the following water conservation measures apply during a declared Level 2 Water Supply Shortage:

(i) Limits on Filling Ornamental Lakes or Ponds: Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life, provided that such animals are of significant value and have been actively managed within the water feature prior to the declaration of a supply shortage level under these Rules and Regulations.

(ii) Limits on Washing Vehicles: Using water to wash or clean a vehicle is prohibited, except by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, by high pressure/low volume wash systems, or at a commercial car washing facility that utilizes a re-circulating water system to capture or reuse water.

(iii) Limits on Filling Residential Swimming Pools and Spas: Re-filling of more than one foot and initial filling of residential swimming pools or outdoor spas with potable water is prohibited.

1-K-4 **LEVEL 3 WATER SUPPLY SHORTAGE – EMERGENCY CONDITION**:

1-K-4a A Level 3 Water Supply Shortage is also referred to as an "Emergency" condition. A Level 3 Water Supply Shortage exists when the Engineer determines that a significant reduction in consumer demand is necessary to maintain sufficient water supplies for public health and safety, declares a water shortage emergency and notifies District residents and businesses of the emergency. Upon the declaration by the Engineer of a Level 3 Water Supply Shortage, the Director shall implement the mandatory Level 3 emergency conservation measures identified in this section, effective on the date determined by the Director.

1-K-4b In addition to the prohibited uses of water identified in Rules 1-K-2 and 1-K-3 of Section K of this part and Section L of this part, the following water conservation measures apply during a declared Level 3 Water Supply Shortage:

(i) **No Watering or Irrigating**: Watering or irrigating of lawn, landscape or other vegetated area with potable water is prohibited. This restriction does not apply to the following categories of use, unless it is determined by the Director that recycled water is available and may be applied to the use:

a. Maintenance of vegetation, including trees and shrubs, that are watered using a hand-held bucket or similar container or hand-held hose equipped with a positive self-closing water shutoff nozzle or device.

b. Maintenance of existing landscape necessary for fire protection.

c. Maintenance of existing landscape for soil erosion control.

d. Maintenance of plant materials identified to be rare or essential to the well-being of protected species.

e. Maintenance of landscape within active public parks and playing fields, day-care centers, golf course greens, and school grounds, provided that such irrigation does not exceed two (2) days per week according to the schedule established to achieve the desired reduction in exterior water use and does not occur between 9:00 a.m. and 4:00 p.m. except for a short duration, not to exceed 3 minutes per station, for the limited purpose of testing or making repairs to the irrigation system.

f. Actively irrigated environmental mitigation projects.

(ii) **Obligations to Fix Leaks, Breaks or Malfunctions**: All leaks, breaks or other malfunctions in the water user's plumbing or distribution system must be repaired within a reasonable time of notification or discovery of the malfunction unless other arrangements are made with the District. A period of forty-eight hours after the water user discovers such malfunction, or receives notice from the District of such malfunction, whichever occurs first, shall be deemed a reasonable time within which to repair such malfunction.

(iii) **No New Potable Water Service**: Upon declaration of a Level 3 Water Supply Shortage, no new potable water service will be provided, no new temporary meters or permanent meters will be provided, and no statements of immediate ability to serve or provide potable water service (such as will-serve letters, certificates, or letters of availability) will be issued, except under the following circumstances:

a. A valid, unexpired building permit has been issued for the project; or

b. The project is necessary to protect the public health, safety, and welfare; or

c. The applicant provides substantial evidence of an enforceable commitment that water demands for the project will be offset prior to the provision of a new water meter(s) to the satisfaction of the District.

This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less.

1-K-5 **NO NEW ANNEXATIONS**: Upon the declaration of a Level 3 Water Supply Shortage, the District will suspend consideration of annexations to its service area. This subdivision does not apply to boundary corrections and annexations that will not result in any increased use of water.

1-K-6 **DISCONTINUED SERVICE**: The Director, in his or her sole discretion, may discontinue service to consumers who willfully violate the Level 3 Water Supply Shortage provisions.

1-K-7 **PROCEDURES FOR DETERMINATION/NOTIFICATION OF WATER SUPPLY SHORTAGE**

1-K-7a **DECLARATION AND NOTIFICATION OF WATER SUPPLY SHORTAGE**: The existence of a Level 1, Level 2 or Level 3 Water Supply Shortage shall be declared by the District Board or Engineer. If the declaration is made by the Engineer, the Engineer shall seek ratification of the declaration from the District Board at its first meeting following the declaration. Upon such declaration, all District customers shall be notified in writing of the applicable mandatory conservation measures, the date the measures are to take effect and, by reference to the applicable rule within these Rules and Regulations, the penalties that may be imposed for failing to comply with the measures.

1-K-8 **HARDSHIP WAIVER**

1-K-8a **UNDUE AND DISPROPORTIONATE HARDSHIP**: If, due to unique circumstances, a specific requirement of this section would result in undue hardship to a person using water or to property upon which water is used that is disproportionate to the impacts to water users generally or to similar property or classes of water users, then the person may apply for a waiver to the requirements as provided in this section.

1-K-8b **WRITTEN FINDING**: The waiver may be granted or conditionally granted only upon a written finding of the existence of facts demonstrating an undue hardship to a person using water or to a property upon which water is used that is disproportionate to the impacts to water users generally or to similar property or classes of water use due to specific and unique circumstances of the user or the user's property.

(i) Application: Application for a waiver shall be on a form prescribed by the District and shall be accompanied by a non-refundable processing fee in an amount set by the District.

(ii) Supporting Documentation: The application shall be accompanied by photographs, maps, drawings, and other information, including a written statement of the applicant

(iii) Required Findings for Waiver: An application for a waiver shall be denied unless the Approval Authority (defined elsewhere in this rule) finds, based upon the information provided in the application, supporting documents, or such additional information as may be requested, and on water use information for the property as shown by the records of the District, all of the following:

a. That the waiver does not constitute a grant of special privilege inconsistent with the limitations upon other residents and businesses;

b. That because of special circumstances applicable to the property or its use, the strict application of this section would have a disproportionate impact on the property or use that exceeds the impacts to residents and businesses generally;

c. That the authorizing of such waiver will not be of substantial detriment to adjacent properties, and will not materially affect the ability of the District to effectuate the purpose of this section and will not be detrimental to the public interest; and

d. That the condition or situation of the subject property or the intended use of the property for which the waiver is sought is not common, recurrent or general in nature.

1-K-8c **APPROVAL AUTHORITY**: The Director shall have approval authority and act upon any completed application no later than twenty (20) days after submittal and may approve, conditionally approve, or deny the waiver. The applicant requesting the waiver shall be promptly notified in writing of any action taken. Unless specified otherwise at the time a waiver is approved, the waiver will apply to the subject property during the term of the applicable Level 1, Level 2 or Level 3 Water Supply Shortage.

1-K-8d **APPEALS TO THE DISTRICT**: An applicant may appeal a decision by the Director to deny or conditionally approve a waiver application by filing a written request for hearing with the Engineer within ten (10) days of the Director's decision. The request for hearing shall state the grounds for the appeal. At a

public hearing, the Engineer shall act as the Approval Authority and review the appeal in accordance with the standards established in this rule. The decision of the Engineer is final.

PART 1 - SECTION L - PERMANENT WATER CONSERVATION MEASURES

RULE

1-L-1 **WATER SAVING DEVICES**: All new customers shall install and use the following water efficient plumbing fixtures:

(i) Ultra low volume toilets (1.6 gallons per flush or less).

(ii) Low flow shower heads (2.0 gallons per minute or less).

1-L-2 **WATER WASTE PROHIBITED:** No person shall use or permit the use of District water as follows:

1-L-2a Watering of turf, ornamental landscape, open ground crops and trees, in a manner or to an extent which allows water to run to waste.

1-L-2b In any manner such that the escape of water through leaks, breaks, or malfunctions within the water user's plumbing or distribution system occurs for any period of time beyond which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of forty-eight hours after the water user discovers such leak, break, or malfunction, or receives notice from the District of such condition, whichever occurs first, is a reasonable time within which to correct such condition.

1-L-2c Using water to wash or clean a vehicle, including but not limited to washing automobiles, trucks, trailers, boats, or other types of mobile equipment, without the use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subdivision does not apply to any commercial car washing facility.

1-L-2d Operating any ornamental fountain, or similar structures, unless water for such is recycled for lawful reuse without substantial loss.

1-L-2e Washing down hard or paved surfaces, including but not limited to washing of sidewalks, walkways, driveways, parking lots or any other hard-surfaced areas by hose or flooding, except as otherwise necessary to prevent or eliminate conditions dangerous to the public health and safety or for other legitimate uses approved by the District, and then only by use of a hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off nozzle or device, a low-volume high-press cleaning machine equipped to recycle any water used, or a low-volume high-pressure water broom.

1-L-2f Serving water in eating or drinking establishments, including but not limited to restaurants, hotels, cafés, bars or other public places where food or drinks are sold or served, to customers without first being expressly requested by the customer.

1-L-2g Running of water or washing with water not otherwise prohibited above which is wasteful and without reasonable purpose.

1-L-2h Watering of residential, commercial, industrial, and governmental outdoor irrigation from 9:00 a.m. to 4:00 p.m. except for a short duration, not to exceed 3 minutes per station, for the limited purpose of testing or making repairs to the irrigation system. Agricultural customers are exempt from this irrigation schedule, but must comply with agricultural irrigation schedules determined by the District.

1-L-2i Running of water or spraying of water onto other properties.

1-L-2j Watering or irrigating of lawn, landscape or other vegetated area with potable water using a landscape irrigation system or a watering device that is not continuously attended for more than ten (10) minutes watering per day per station. This rule does not apply during the establishment period, as determined by the District, for new landscaping.

1-L-2k Laundering by hotels, motels and other commercial lodging establishments, except where customers are given the option of not having towels and linens laundered daily through the prominent display of written notice of such option in each bathroom using clear and easily understood language.

1-L-2l Through the installation of single pass cooling systems in buildings requesting new water service.

1-L-2m Through the installation of non-recirculating water systems in new commercial conveyor car wash and new commercial laundry systems.

1-L-2n Through the use of non-water conserving dish wash spray valves by food preparation establishments, such as restaurants and cafes.

1-L-2o Through a commercial conveyor car wash operating without a recirculating water system, or without first securing a waiver of this requirement from the Director.

1-L-3 **IRRIGATION SCHEDULES**: The district may impose irrigation schedules for outdoor use, including agricultural use, to address water conservation and limited water supply.

1-L-4 **FAILURE TO COMPLY**

1-L-4a **CIVIL PENALTIES**: In addition to any other penalties or sanctions provided by law, the following civil penalties shall be imposed for violation of any of the provisions of these Rules and Regulations, to be paid by the customer at the premises at which the violation occurred:

(i) For the first violation of any of the provisions of these Rules and Regulations, a written notice will be given to the customer.

(ii) For the second violation of any of the provisions of these Rules and Regulations within the preceding (12) twelve calendar months, a penalty of one hundred dollars ($100.00) shall be imposed by written

notice to the customer. This penalty is payable as part of the water bill, by the customer at the premises at which the violation occurred.

(iii) For the third violation of any of the provisions of these Rules and Regulations within the preceding (12) twelve calendar months, a penalty of two hundred and fifty dollars ($250.00) shall be imposed by written notice to the customer. This penalty is payable as part of the water bill, by the customer at the premises at which the violation occurred.

(iv) For the fourth violation of any of the provisions of these Rules and Regulations within the preceding twelve (12) calendar months, a penalty of five hundred dollars ($500.00) shall be imposed by written notice to the customer. This penalty is payable as part of the water bill, by the customer at the premises at which the violation occurred.

The District may also give written notice to the customer indicating that it will install a flow restricting device of 1 GPM capacity for services up to one and one half inch meter size, and comparatively sized restrictors for larger services, on the service of the customer at the premises at which the violation occurred for a period of not less than forty-eight (48) hours. The charge for installing such a flow restricting device will be based upon the size of the meter and the actual cost of installation. The charge for removal of the flow restricting device and restoration of normal service shall be based on the actual cost involved. Said charges shall be payable by the customer as part of the water bill. Restoration of normal service will be performed during the hours of 8:00 a.m. to 4:00 p.m. on regular working days. In addition, a surcharge penalty of $100.00 shall be imposed for restoration of normal service, payable by said customer as part of the water bill.

(v) If there are five violations of any of the provisions of these Rules and Regulations within twelve (12) consecutive calendar months, the District may, following notice to the customer as described herein, discontinue water service to the customer at the premises at which the violation occurred.

1-L-4b **NOTICE**: The District will give notice of each violation to the customer at the premises at which the violation occurred, as follows:

(i) For a first, second, or third violation, the District may give written notice of such violation to the customer personally or by regular mail.

(ii) If the penalty assessed is, or includes, the installation of a flow restrictor or the discontinuance of water service to the customer for any period of time whatever, notice of the violation will be given in the following manner:

a. By giving written notice thereof to the customer personally; or
b. If the customer is absent from or unavailable at the customer's billing address, place of residence, or place of business, by leaving a copy with an adult at such places, and by sending a

copy through the United States mail addressed to the customer at such places, via registered mail return receipts requested.

c. If service of the notice as provided in a & b above cannot be accomplished, notice can be given by affixing a copy in a conspicuous place on the property where the failure to comply has occurred and also by delivering a copy to a person residing at the property, if such person can be found.

d. All notices will contain, in addition to the facts of the violation, a statement of the possible penalties for each violation, a statement informing the customer of the customer's right to a hearing on the violation, a brief summary of the appeal process specified in this rule, and the date and time installation of the restrictor or discontinuance of the service will occur.

1-L-4c **HEARING**: Any customer against whom a penalty is to be levied pursuant to this section shall have a right to a hearing, in the first instance by the Director, with the right of appeal to the Engineer or his or her designee, on the merits of the alleged violation, upon the written request of that customer to the Director within fifteen (15) days of the date of giving notice of the violation. Penalties, including termination of water service, will be stayed until any such hearing is conducted and a written decision is made by the Director or his or her designee and given to the customer.

1-L-4d **APPEAL OF DECISION OF DIRECTOR**: A request for an appeal must be in writing and filed with the Engineer or his or her designee. The filing by a customer of a request for an appeal for any form of relief must be made within fifteen (15) days of the giving of the decision of the Director to the customer. Filing of such a request will automatically stay the implementation of the proposed course of action, pending the decision of the Engineer or his or her designee. No other or further stay will be granted. The appeal hearing will be scheduled to occur within a reasonable period of time following the written notice of appeal. The customer may present any evidence that would tend to show that the alleged violation has not occurred. Formal rules of evidence will not apply and all relevant evidence customarily relied upon by reasonable persons in the conduct of serious business affairs will be admissible, unless a sound objection warrants its exclusion as determined by the Engineer or his or her designee. The decision of the Engineer or his or her designee shall be final.

1-L-4e **RECONNECTION**: Where water service is disconnected, as authorized above, it will be reconnected upon correction of the condition or activity and the payment of the estimated reconnection charge and other applicable charges.

1-L-4f **PUBLIC HEALTH AND SAFETY**: Nothing contained in these Rules and Regulations shall be construed to require the District to curtail the supply of water to any customer when, in the discretion of the Engineer or his or her designee, such water is required by that customer to maintain an adequate level of public health and safety.

APPENDIX B

Revised Fire Protection Plan

HITCH RANCH
FIRE PROTECTION PLAN

Prepared for:

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Camarillo, California 93010

Applicant:

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~~JULY 2021~~APRIL 2022

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Executive Summary

This Fire Protection Plan (FPP) has been prepared for the proposed Hitch Ranch mixed-density residential community Project (Proposed Project) that incorporates land uses for housing and recreational purposes. The Proposed Project would consist of the construction of 755 dwelling units on approximately 277.30 acres including 328 single-family dwelling units on approximately 46.91 acres and 427 multi-family dwelling units on approximately 26.47 acres (191 medium density units and 236 high density units), 32 open space lots, two (2) recreation space lots, and one (1) public park lot located within the City of Moorpark in the County of Ventura, California. The Proposed Project site is currently undeveloped and is located in the rolling hills north of Poindexter, east of Gabbert Road and west of Moorpark Avenue/Walnut Canyon Road (State Route 23). The Proposed Project site is located approximately 0.5 miles south of the Moorpark County Club and bordered to the south by the Union Pacific Railroad track ROW, a commercial development park, existing single-family residences, and a middle school; to the west by existing single-family residences; and to the east by single-family residences and an elementary school. The proposed development will be situated on seven parcels comprised of the following Assessor Parcel Numbers (APN's): APN's 511-0-020-170, 511-0-020-110, 511-0-020-130, 511-0-020-160, 511-0-020-180, 511-0-020-195, and 511-0-200-245. As part of the Proposed Project, access to the site will be improved by widening existing Casey Road to the east, extending High Street across the southern boundary of the Project site from Gabbert Road to the easterly boundary of the project, extending proposed North Hills Parkway across the center of the project site from Gabbert Road to the west to State Route 23 to the east, and from existing Meridian Hills Road to the north. As indicated in the Moorpark's General Plan Circulation Element, access will be improved and area circulation and evacuation capabilities will be improved as the project eliminates three existing dead end roads by connecting them with project roads.

The Hitch Ranch Proposed Project site lies within an area considered a Very High Fire Hazard Severity Zone (VHFHSZ), as designated by the Ventura County Fire Department (VCFD) and California Department of Forestry and Fire Protection (CAL FIRE). Fire hazard designations are based on topography, vegetation, and weather, amongst other factors. In summary, the project is located in the western portion of the City of Moorpark, adjacent to open space areas to the north, is currently undeveloped and vacant, and is covered primarily by flashy grass fuels. The terrain on, and within the vicinity of the project, is characterized by relatively flat slopes, with gradients reaching up to roughly 9%. The area, like all of Ventura County, is subject to seasonal weather conditions that can heighten the likelihood of fire ignition and spread, and, considering the site's terrain and vegetation, may result in a moderate to fast moving and moderate-intensity wildfire.

This FPP evaluates and identifies the potential fire risk associated with the Proposed Project's land uses and identifies requirements for water supply, fuel modification and defensible space, access, building ignition and fire resistance, and fire protection systems, among other pertinent fire protection criteria. The purpose of this plan is to generate and memorialize the fire safety requirements and standards of the VCFD along with project-specific measures based on the site, its intended use, and its fire environment.

The Proposed Project site is within the jurisdiction of the VCFD. The VCFD operates two fire stations that would respond to an incident on the site, including Station Nos. 40 and 42. Based on the Hitch Ranch Project site location in relation to existing VCFD stations, travel time to the site for the first responding engine from Station 42 is less than 2 minutes to the proposed project entrance, on Casey Road. Travel within the development may reach up to 2 minutes, based on the longest proposed road stretch of approximately 0.80 miles, resulting in response time of less than 4 minutes for the entire development. Secondary response would arrive in less than 4 minutes. Based on these calculations, emergencies within the project can be responded to by VCFD's first arriving unit

(average maximum initial response of no more than 8.5 minutes for fire apparatus and 5 minutes for ambulance, 90% of calls) in accordance with the County's emergency response standard. In addition, automatic/mutual aid agreements are in place with all surrounding communities and have been recently improved through the implementation of a computer aided dispatch system.

As determined during the analysis of this site and its fire environment, the Proposed Project site, in its current condition, may include characteristics that, under favorable weather conditions, could have the potential to facilitate fire spread. Under extreme conditions, wind-driven wildfires from the east / northeast could cast embers onto the property. Once the Proposed Project community is built, the Hitch Ranch on-site fire potential will be lower than its current condition due to fire safety requirements that will be implemented on this site, including ignition resistant construction standards, requirements for water supply, fire apparatus access, fuel modification and defensible space, interior fire sprinklers and 8.5 minute or less fire response travel times were integrated into the code requirements and internal VCFD guidelines based on the County of Ventura Strategic Plan. When it became clear that specifics of how structures were built, how fire and embers contributed to ignition of structures, what effects fuel modification had on structure ignition, how fast firefighters could respond, and how much (and how reliable) water was available, were critically important to structure survivability, the Fire and Building codes were revised appropriately. Ventura County now boast some of the most restrictive codes for building within Wildland Urban Interface (WUI) areas that focus on preventing structure ignition from heat, flame, and burning embers.

As detailed in this FPP, the Hitch Ranch Project site's fire protection approach will include a redundant layering of protection methods that have proven to reduce overall fire risk. The requirements and recommendations included herein are performance based rather than a prescriptive, one-size-fits-all approach. The fire protection approach is designed to reduce the wildfire hazards on the site, to minimize risks associated with proposed uses, and aid the responding firefighters during an emergency. No singular measure is intended to be relied upon for the site's fire protection, but rather, a system of fire protection measures, methods, and features combine to result in enhanced fire safety, reduced fire potential, and a prepared community.

Early evacuation for any type of wildfire emergency at the Hitch Ranch Proposed Project site is the preferred method of providing for safety, consistent with the VCFD's current approach for evacuation. As such, the Hitch Ranch Project residents will be provided information on, encouraged to practice, and implement a "Ready, Set, Go!" (Ventura County Fire Department 2016) approach to site evacuation. The "Ready, Set, Go!" concept is widely known and encouraged by the state of California and most fire agencies, including the VCFD. Pre-planning for emergencies, including wildfire emergencies, focuses on being prepared, having a well-defined plan, minimizing potential for errors, maintaining the site's fire protection systems, and implementing a conservative (evacuate as early as possible) approach to evacuation and site uses during periods of fire weather extremes.

Based on the results of this FPP's analysis and findings, the following FPP implementation measures will be provided by the Hitch Ranch Proposed Project site. These measures are discussed in more detail throughout this FPP.

- Project buildings will be constructed of ignition resistant[1] construction materials and include automatic fire sprinkler systems based on the latest adopted Building and Fire Codes for occupancy types.

[1] A type of building material that resists ignition or sustained flaming combustion sufficiently to reduce losses from wildland-urban interface conflagrations under worst-case weather and fuel conditions with wildfire exposure of burning embers and small flames, as prescribed in CBC, Chapter 7A and State Fire Marshal Standard 12-7A-5, Ignition-Resistant Materials.

- Project will provide up to 200 feet of Zone 0~~A~~, Zone 1~~B~~, Zone 2, and Zone ~~C~~3 fuel modification, as described in VCFD Standard 515, *Defensible Space and Fuel Modification Zones Standard*, with additional fire protection measures, including dual-tempered dual pane window upgrade for facades facing the natural open space. The ~~The project would also hire a qualified~~ Ventura County Fire Department will conduct annual inspections to determine fuel modification zone compliance ~~approved 3rd party fuel modification zone inspector to provide annual inspections~~.

- Landscape plantings will not utilize prohibited plants that have been found to be highly flammable (see Appendix E).

- Fire apparatus access roads (i.e., public and private streets) will be provided throughout the development and will vary in width and configuration but will all provide at least the minimum required unobstructed travel lanes, lengths, turnouts, turnarounds, and clearances required by applicable codes. Primary access and internal circulation will comply with the requirements of the VCFD.

- Buildings will be equipped with automatic fire sprinkler systems meeting requirements.

- Water capacity and delivery provide for a reliable water source for operations and during emergencies requiring extended fire flow.

- The Hitch Ranch residents will be provided information on, encouraged to practice, and implement a "Ready, Set, Go!" approach to site evacuation

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1 Introduction

This Fire Protection Plan (FPP) has been prepared for the proposed Hitch Ranch Project (Proposed Project) in Moorpark, California, an incorporated city in Ventura County. The purpose of the FPP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. Additionally, the purpose of this plan is to generate and memorialize the fire safety requirements of the Fire Authority Having Jurisdiction (FAHJ), namely the VCFD. Requirements are based on site-specific characteristics and incorporate input from the project's developer/applicant (Comstock Homes), project planners, engineers, and architects, as well as the VCFD.

As part of the assessment, the plan has considered the fire risk presented by the site including the property location and its topography, geology, surrounding combustible vegetation (fuel types), climatic conditions, fire history and the proposed land use. This FPP addresses water supply, access, structural ignitability and ignition resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. The plan identifies fuel modification zones and recommends the types and methods of treatment that will protect this project and its essential infrastructure. The FPP recommends measures that developer/builders will take to reduce the probability of structural ignition throughout the project.

The following tasks were performed toward completion of this plan:

- Gather site specific climate, terrain, and fuel data;
- Collect site photographs;
- Process and analyze Hitch Ranch Project data using the latest GIS technology;
- Predict fire behavior using scientifically based fire behavior models, comparisons with actual wildfires (e.g., 2003 Simi, 2006 Shekell, and 2009 Guiberson Fires) in similar terrain and fuels, and experienced judgment;
- Analyze and guide design of proposed infrastructure;
- Analyze the existing emergency response capabilities;
- Assess the risk associated with the proposed Hitch Ranch Project and the project site; and
- Prepare this FPP detailing how fire risk will be mitigated through a system of fuel modification, structural ignition resistance enhancements, and fire protection delivery system upgrades.

This FPP is consistent with the uniform emergency access and installation standards used throughout the State as described in the 2019 California Building Code (CBC), Chapter 7A (or then current edition), which focuses primarily on preventing ember penetration into homes, a leading cause of structure loss from wildfires; thus, it is an important component of the requirements of this FPP and the California Code of Regulations (CCR) Titles 14 and 24 and the 2019 California Fire Code (CFC) (or then current edition) as well as the operational procedures and capabilities particular to the VCFD emergency vehicles and suppression personnel. In addition, the Ventura County Fire Code and the Ventura County Fire Protection District (VCFPD) Ordinance No. 31 are even more restrictive. In most instances, this FPP requires inclusion of these local code requirements at the Proposed Project site. The purpose of this plan is to generate and memorialize the fire safety requirements of the FAHJ, namely the VCFD. Requirements are based on site-specific characteristics and incorporate input from project planners, engineers, biologists, architects, and the VCFD.

Field observations were utilized to augment existing digital site data in generating the fire behavior models and formulating the recommendations presented in this FPP. Refer to Appendix A for site photographs of existing site conditions.

1.1 Proposed Project Summary

1.1.1 Location

The Proposed Project site is located within the west-northwest portion of the incorporated City of Moorpark in Ventura County, California. The Proposed Project site is currently undeveloped and is located in the rolling hills north of Poindexter Avenue, east of Gabbert Road and west of Moorpark Avenue/Walnut Canyon Road (State Route 23). More specifically, the Hitch Ranch Project site is situated in Section 5 of Township 2 North, Range 19 West and Section 32 of Township 3 North, Range 19 West on the U.S. Geological Survey (USGS) 7.5-minute Moorpark, California quadrangle map (Figure 1, *Project Site Location Map*). Surrounding land uses include a residential community to the northwest, a Southern California Edison (SCE) Moorpark Substation to the southwest, a commercial and residential development to the south, Walnut Canyon Elementary School and residential developments to the east, a new residential community to the northeast, and naturally vegetated open space land separating the Proposed Project site from the Moorpark County Club approximately 0.5 miles to the north. The proposed development will be situated on seven parcels comprised of the following Assessor Parcel Numbers (APN's): APN's 511-0-020-170, 511-0-020-110, 511-0-020-130, 511-0-020-160, 511-0-020-180, 511-0-020-195, and 511-0-200-245. The entirety of the proposed property lies within the local responsibility area (LRA) Very High Fire Hazard Severity Zone (VHFHSZ), as statutorily designated by CAL FIRE (2007) and the VCFD (Figure 2, Hitch Ranch Fire Hazard Severity Zone Map).

1.1.2 Project Description

The Proposed Project consists of a mixed-density residential community that incorporates land uses for housing and recreational purposes. The Proposed Project would consist of the construction of 755 dwelling units on approximately 277.30 acres including 328 single-family dwelling units on approximately 46.91 acres and 427 multi-family dwelling units on approximately 26.47 acres (191 medium density units and 236 high density units), 32 open space lots, three (3) recreation space lots, and one (1) public park (Figure 3, *Proposed Site Plan*). The single-family residential units are proposed to be one and two stories in height, while the multi-family dwelling units would be two and three stories in height. Single-family dwelling units are proposed for Planning Areas (PA) 1, 2, and 3, and multi-family dwelling units are proposed for PA3 and PA4. Comstock plans to phase the land development of the project over two phases. In addition to the 755 proposed residential dwelling units, the project will include lots dedicated to recreation and fuel modification zones (FMZ) to be managed by the property owners and the Homeowners Association (HOA). Three private recreation areas are proposed, including The Outlook located in PA1 and two additional recreation lots are located in PA3 and PA 4. Landscaped areas may incorporate horticultural plantings. The proposed Hitch Ranch Project would include up to 200 feet of fuel modification, consisting of four~~three~~ zones, a five-foot Zone 0 (0 to 5 feet from a structure), a 25~~30~~-foot Zone 1~~A~~ (5 to 30 feet from a structure, a 70-foot Zone 2~~B~~ (30 to 100 feet from a structure), and a 100-foot thinning Zone 3 (100 to 200 feet from a structure)~~C~~ (as required by the VCFD Standard 515, *Defensible Space and Fuel Modification Zones Standard)*. Public access to the site is currently available via Gabbert Road on the west and from Casey Road on the east. Access to the site will be improved by extending existing Casey Road from its terminus east of the project site to provide access to PA2, PA3, and PA4; by extending High Street from its current terminus east of the project site across the southern boundary of the Project site to Gabbert Road; by extending North Hills Parkway across the

center of the project site from Gabbert Road to State Route 118; and by extending Meridian Hills Drive from the existing terminus and would connect to Street "A" at North Hills Parkway. As indicated in the Moorpark's General Plan Circulation Element, North Hills Parkway would ultimately be constructed as a four-lane roadway. Gabbert Road would be improved to a four-lane arterial roadway from the point of connection with Poindexter Avenue, crossing the Union Pacific Railroad tracks, and continuing to North Hills Parkway. North of North Hills Parkway, Gabbert Road would taper back to its existing width. Appendix A provides photographs of the site in its current, undeveloped condition.

1.1.3 Current Land Use

The Hitch Ranch Project site is currently undeveloped and vacant, consisting of naturally vegetated slopes and disturbed land. According to the Hitch Ranch 2019 Biological Update prepared for Impact Sciences, the existing site is comprised mainly of annual brome grassland (approximately 154 acres), California sagebrush-deerwood scrub (approximately 39 acres), and non-native woodlands (approximately 11 acres), and a variety of disturbed habitats on the relatively flat with gently rolling hills Project site. In 2003 and 2006, fires entirely burned these plant communities, but they have since grown back in similar proportions, because these communities are comprised of species largely adapted to periodic fires. Numerous dirt roads were observed throughout the site to accommodate existing land uses. The Project site exhibits signs of prior occupation in the form of foundations, fences, and water production. The existing ranch run cows within the fence line of the property to graze the grassland throughout the property. Overhead electrical transmission lines traverse the western portion of the site which are connected to the Southern California Edison (SCE) Substation located just southwest of the Proposed Project site.

The surrounding land uses include single-family residential developments to the northwest, east, and south, the Moorpark County Club to the north, and a commercial development to the south. Railroad tracks and Poindexter Avenue borders the southern edge of the property.

1.1.4 Proposed Land Use

The Hitch Ranch Project proposes to construct 328 single-family dwelling units on approximately 46.91 acres and 427 multi-family dwelling units on approximately 26.47 acres (191 medium density units and 236 high density units), 32 open space lots, three (3) recreation space lots, and one (1) public park. In addition to the 755 proposed residential dwelling units, the project will include lots dedicated to recreation and open space lands. Three private recreation areas are proposed, including The Outlook located in PA1 and two additional recreation lots are located in PA3 and PA 4. Approximately 104-acres of open space is proposed and would remain in its existing condition and would provide a buffer between existing residential uses west of the Proposed Project site and the single-family residences proposed in PA1 and PA2. Four detention basins are proposed within the project site to protect against flooding from the local drainage basin (i.e, Gabbert and Walnut Canyons). All four basins are designed as soft-bottom facilities, which would ultimately drain to the Ventura County Watershed Protection District (VCWPD) channel located along the southern perimeter of the project site. An approximately 5.56-acre public park is proposed in the southeast portion of the project site that would be dedicated to the City of Moorpark, which tentatively will include athletic fields and an aquatic facility. A 100- to 200-foot fuel modification zone would occur between the open space areas and the on-site dwelling units to be managed by the property owners and the HOA.

As indicated in Figure 3, public and private streets will provide access to the development, including a single entrance off Gabbert Road from the west, a single entrance from the proposed extension of High Street along the southern property boundary, and three proposed entrances from the north and east. In addition to the single and multi-family dwelling units, the project will include fuel modification zones. Access to the site will be improved as indicated in the Moorpark's General Plan Circulation Element and area circulation and evacuation capabilities will

be improved as the project eliminates three existing dead end roads by connecting them with project roads. Details are provided in Section 6.1.4.

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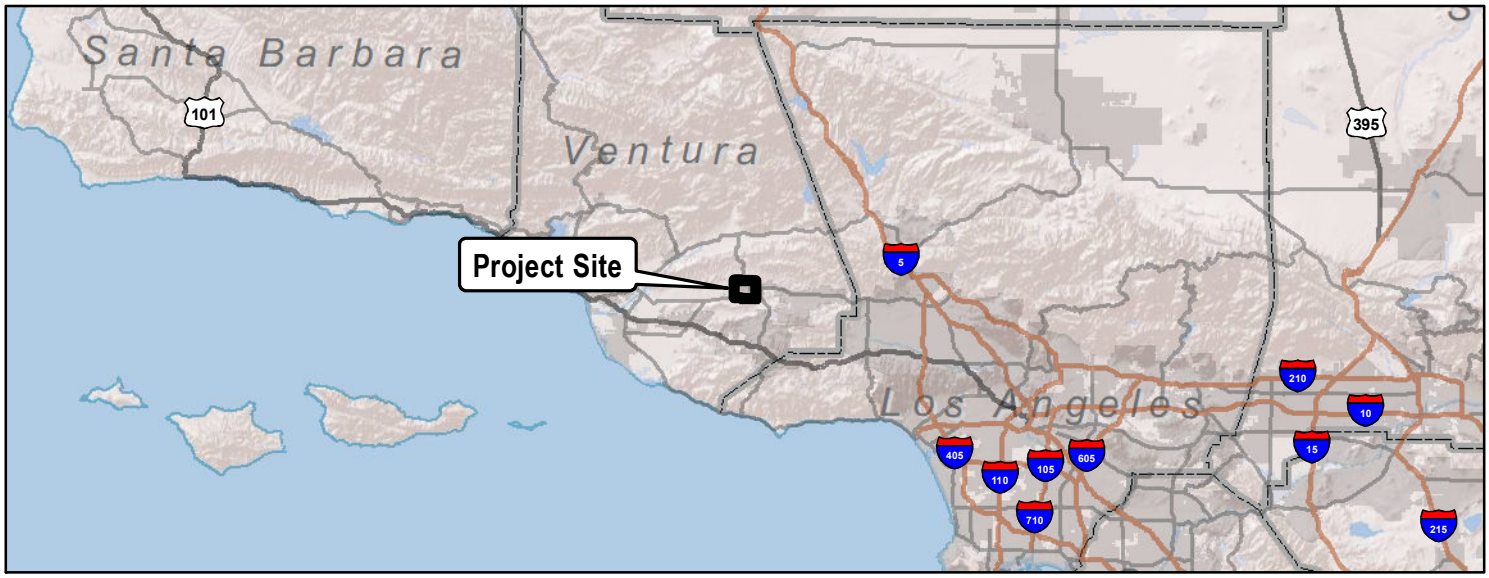

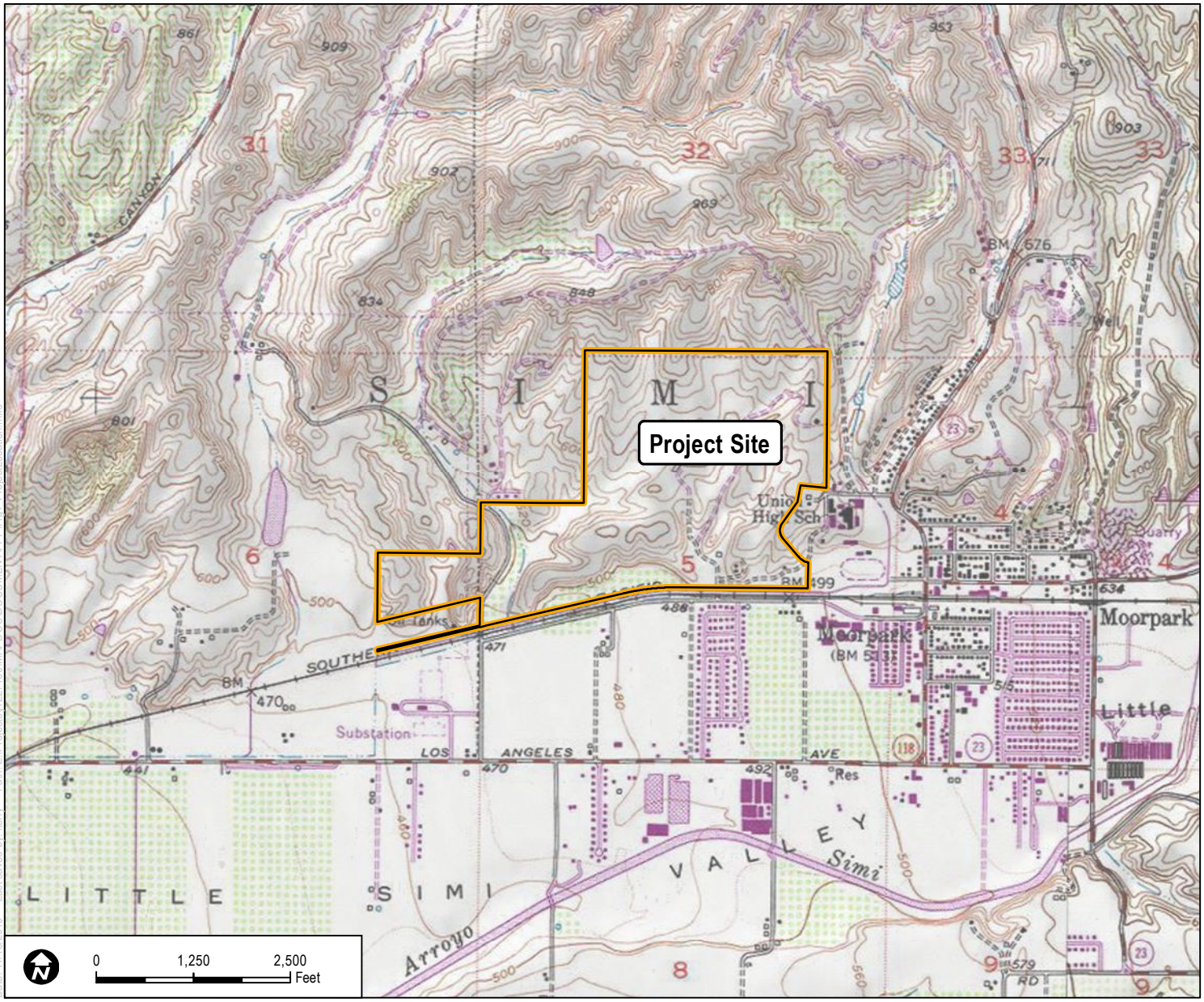

SOURCE: USGS 7.5 Minute Series, Moorpark Quadrangle

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FIGURE 1

Project Location

Hitch Ranch Fire Protection Plan

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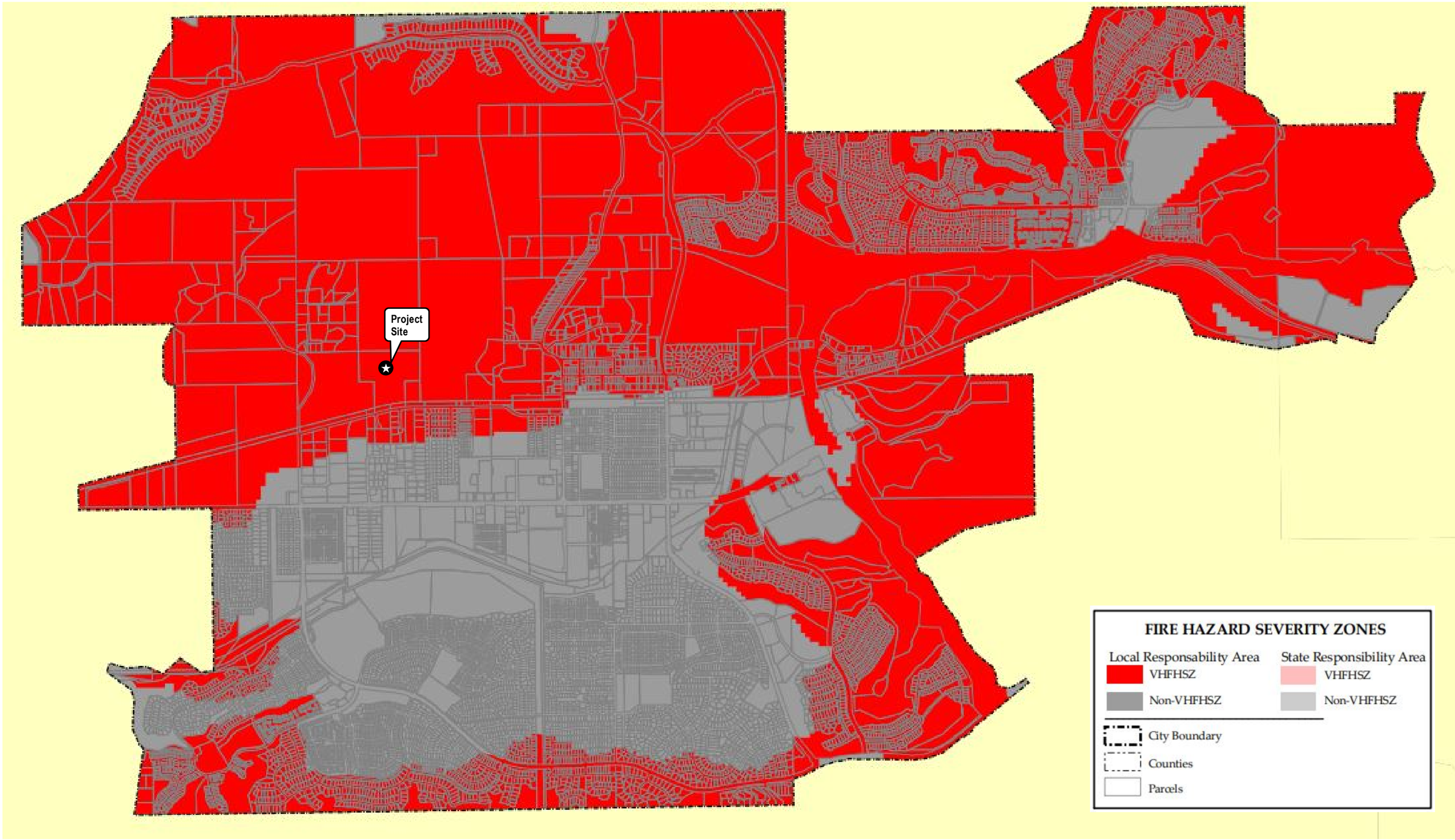

SOURCE: CAL FIRE, 2019

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FIGURE 2
Hitch Ranch Fire Hazard Severity Zone Map

HITCH RANCH PROPOSED PROJECT FIRE PROTECTION PLAN

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SOURCE: WILLIAM HEZMALHALCH ARCHITECTS AND ENCOMPASS CONSULTANT GROUP, 2020

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FIGURE 3
Proposed Site Plan

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2 Proposed Project Site Risk Analysis

2.1 Environmental Setting and Field Assessment

Dudek conducted a site evaluation on October 11, 2019, in order to confirm/acquire site information, document existing site conditions, and to determine potential actions for addressing the protection of the project's structures. While on site, Dudek's Fire Planners assessed the area's topography, natural vegetation and fuel loading, surrounding land use and general susceptibility to wildfire. Among the field tasks that were completed included:

- Topography evaluation
- Vegetation/fuel assessments
- Photograph documentation of the existing condition
- Confirmation/verification of hazard assumptions
- Off-site, adjacent property fuel and topography conditions
- Surrounding land use confirmations
- Necessary fire behavior modeling data collection
- Ingress/egress documentation
- Nearby Fire Station reconnaissance.

Field observations were utilized to augment existing site data in generating the fire behavior models and formulating the recommendations detailed in this report.

2.2 Site Characteristics and Fire Environment

Fire environments are dynamic systems and include many types of environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire movement. Areas of naturally vegetated open space are typically comprised of conditions that may be favorable to wildfire spread. The three major components of fire environment are topography, vegetation (fuels), and climate. The state of each of these components and their interactions with each other determines the potential characteristics and behavior of a fire at any given moment. It is important to note that wildland fire may transition to urban fire if structures are receptive to ignition. Structure ignition depends on a variety of factors and can be prevented through a layered system of protective features including fire resistive landscapes directly adjacent the structure(s), application of known ignition resistive materials and methods, and suitable infrastructure for firefighting purposes. Understanding the existing wildland vegetation and urban fuel conditions on and adjacent to the site is necessary to understand the potential for fire within and around the Hitch Ranch Project site.

2.2.1 Topography

The project site is situated within the Transverse Ranges at the southern limit of the Simi Hills, between the Oak Ridge Mountains to the north and the Las Posas Hills to the south. The site is characterized by gently rolling hills and a series of north-south trending ridges and canyons. The topography ranges from moderately steep to relatively flat, and is highly variable; elevation at the site ranges from approximately 475 to 720 feet above mean sea level

(AMSL). The site has been previously disturbed by agricultural operations and several fires in recent years. Numerous dirt roads, concrete foundations of old farm buildings, and culverts in old agricultural ditches are still present as well as a livestock shed and goats in a fenced pen. Several ephemeral drainages convey storm water down the steep slopes of the site, but no defined beds and banks or well-developed riparian plant communities were observed. Some evidence of erosion was noted in 2018 and 2019 at areas previously disturbed, such as where pipelines were installed and along Gabbert Road (Hitch Ranch Specific Plan EIR, Impact Sciences, Inc., 2019).

2.2.2 Climate

The Proposed Project site, like much of Southern California, is influenced by the Pacific Ocean and a seasonal, migratory subtropical high-pressure cell known as the "Pacific High." Wet winters and dry summers with mild seasonal changes characterize the Southern California climate. This climate pattern is occasionally interrupted by extreme periods of hot weather, winter storms, or dry, easterly Santa Ana winds. The average high temperature for the project area is approximately 74°F, with daily highs in the summer and early fall months (July–October) exceeding 95°F. Precipitation typically occurs between December and March with average rainfall of 18 inches (Western Regional Climate Center, 2019).

The prevailing wind pattern is from the west (on-shore), but the presence of the Pacific Ocean causes a diurnal wind pattern known as the land/sea breeze system. During the day, winds are from the west–southwest (sea) and at night winds are from the northeast (land), averaging 2 miles per hour (mph). During the summer season, the diurnal winds may average slightly higher (approximately 19 mph) than the winds during the winter season due to greater pressure gradient forces. Surface winds can also be influenced locally by topography and slope variations. The highest wind velocities are associated with downslope, canyon, and Santa Ana winds. The Hitch Ranch Project site does not include topography that would create unusual weather conditions. However, the site is subject to periodic extreme fire weather conditions that occur throughout Ventura County.

Typically, the highest fire danger is produced by the high-pressure systems that occur in the Great Basin, which result in the Santa Ana winds of Southern California. Sustained wind speeds recorded during recent major fires in Ventura County exceeded 30 mph and may exceed 50 mph during extreme conditions, as was the case during the most recent wildfire. The Santa Ana wind conditions are a reversal of the prevailing southwesterly winds that usually occur on a region-wide basis during late summer and early fall. Santa Ana winds are warm winds that flow from the higher desert elevations in the north through the mountain passes and canyons. As they converge through the canyons, their velocities increase. Consequently, peak velocities are highest at the mouths of canyons and dissipate as they spread across valley floors. Santa Ana winds generally coincide with the regional drought period and the period of highest fire danger. The Hitch Ranch Project site is affected by strong winds, such as Santa Ana winds.

2.2.3 Vegetation (Fuels)

Vegetation within the project site was identified, characterized, and mapped using geographic information system [GIS] technology (Impact Sciences, Inc., 2021). Vegetation nomenclature used to describe plant communities is

based on the current list of vegetation types, available from the CDFW VCMP.[2] Common plant names of plant taxa are taken from various informal sources. The majority of the site is disturbed by active cattle grazing and covered in non-native brome grasslands, specifically to the east of Gabbert Road. Native plant communities present on site are substantially disturbed by grazing and include California sagebrush-deerweed scrub, California sagebrush scrub, cactus scrub, blue elderberry stands, and chaparral yucca scrub. Also present are disturbed areas that are actively disced, developed areas, and nonnative woodland. The area proposed for development and within the project grading limits will be converted to roads, structures, and landscaped vegetation following project completion. Vegetative fuels within proposed fuel modification zones consist primarily of annual grasslands and California sage scrub, although these fuels will be modified as a result of development, altering their current structure and species composition. Areas outside of proposed development and fuel modification zones can be classified primarily as annual grasslands and sage scrub. Table 1, Project Vegetation Communities and Land Cover Types, and the following discussion provide a description of the botanical characteristics of each of the plant communities found on the project site.

Table 1. Project Vegetation Communities and Land Cover Types

Vegetation Community or Land Cover Type	Acres*	Percent of Site (%)
Annual brome grassland	1.35	0.47
Annual brome grassland (Disturbed/Grazed)	152.45	53.45
Total Annual brome grassland	153.79	54.01
Non-Native woodland	10.65	3.73
Blue Elderberry Stands	1.62	0.56
Blue Elderberry Stands (Disturbed/Grazed)	5.38	1.88
Total Blue Elderberry Stands	7.00	2.46
California sagebrush-deerwood scrub	23.85	9.20
California sagebrush-deerwood scrub (Disturbed/grazed)	12.92	4.53
Total California sagebrush-deerwood scrub	39.13	13.74
Cactus scrub (Disturbed/Grazed)	1.76	0.62
Developed	1.44	0.51
Disturbed/Disced	70.53	24.78
Total	**284.73**	**100.0**

[2] California Department of Fish and Game, Biogeographic Data Branch. 2009. Vegetation Classification and Mapping Program List of California Vegetation Alliances, December 28, 2009.

Source: Impact Sciences, Inc. Biological Resources Assessment Report 2021. Refer to Impact Sciences, Inc. Biological Resources Assessment Report for descriptions of the vegetation communities or land cover types.

* Acreages include the 277.3-acre project site and off-site improvement areas associated with the development (e.g., roadway connections) as depicted in Figure 3.3-2 of the Biological Assessment Report.

2.2.4 Vegetation Dynamics (Fuel Loads)

The vegetation described above translates to fuel models used for fire behavior modeling, discussed in Chapter 4 of this FPP. Variations in vegetative cover type and species composition have a direct effect on fire behavior. Some plant communities and their associated plant species have increased flammability based on plant physiology (resin content), biological function (flowering, retention of dead plant material), physical structure (bark thickness, leaf size, branching patterns), and overall fuel loading. For example, non-native grass dominated plant communities become seasonally prone to ignition and produce lower intensity, higher spread rate fires. In comparison, California sagebrush scrub can produce higher heat intensity and higher flame lengths under strong, dry wind patterns, but does not typically ignite or spread as quickly as light, flashy grass fuels. The corresponding fuel models for each of these vegetation types are designed to capture these differences.

As described, vegetation plays a significant role in fire behavior, and is an important component to the fire behavior models discussed in this report. A critical factor to consider is the dynamic nature of vegetation communities. Fire presence and absence at varying cycles or regimes disrupts plant succession, setting plant communities to an earlier state where less fuel is present for a period of time as the plant community begins its succession again. In summary, high-frequency fires tend to convert shrublands to grasslands or maintain grasslands, and fire exclusion tends to convert grasslands to shrublands over time as shrubs sprout back or establish and are not disturbed by repeated fires. In general, biomass and associated fuel loading will increase over time, assuming that disturbance (e.g., fire, grazing, or farming) or fuel reduction efforts are not diligently implemented. It is possible to alter successional pathways for varying plant communities through manual alteration. This concept is a key component in the overall establishment and maintenance of the proposed FMZs for the project site. The FMZs will consist of irrigated and maintained landscapes that will be subject to regular “disturbance” in the form of maintenance and will not be allowed to accumulate excessive biomass over time, which results in reduced fire ignition, spread rates, and intensity.

2.2.5 Fire History

Fire history is an important component of a site-specific FPP. Fire History data provides valuable information regarding fire spread, fire frequency, ignition sources, and vegetation/fuel mosaics across a given landscape. One important use for this information is as a tool for pre-planning. It is advantageous to know which areas may have burned recently and therefore may provide a tactical defense position, what type of fire burned on the site, and how a fire may spread. Fire history represented in this FPP uses the Fire and Resource Assessment Program (FRAP) database. FRAP summarizes fire perimeter data dating to the late 1800s, but which is incomplete due to the fact that it only includes fires over 10 acres in size and has incomplete perimeter data, especially for the first half of the 20th century (Syphard and Keeley 2016). However, the data does provide a summary of recorded fires and can be used to show whether large fires have occurred in the Project area, which indicates whether they may be possible

in the future. According to available data from the CAL FIRE in the FRAP database[3], twenty-nine (29) fires have burned in the vicinity of the project site since the beginning of the historical fire data record, including the most recent Easy Fire which burn approximately 1,700 acres in October 2019. Recorded wildfires within 5 miles range from 11 acres to 107,570 (2003 Fire) acres and the average fire size is 9,075 acres (not including the 2003 Simi Fire or fires smaller than 10 acres). The Easy Fire (approximately 1,700 acres) is the most recent fire, which occurred approximately 1 mile east of the Project Site (not included in FRAP data based because the fire occurred in October 2019). VCFD may have data regarding smaller fires (less than 10 acres) that have occurred on the site that have not been included herein. Two fires have burned on the project site. Table 2 summarizes the fire history for the area within 5 miles of the Hitch Ranch Project site. Fire history for the general vicinity of the project site is illustrated in the map in Appendix B.

Table 2. Fire History within Five Miles of the Hitch Ranch Project Site

Fire Year*	Fire Name	Interval (years)	Total Area Burned (acres)
1940	Camarillo Rifle Range	N/A	1,411
1943	Jones Canyon	3	522
1944	Long Canyon	1	462
1946	Wiley Canyon	2	21,266
1953	Shields Lease	7	11,775
1956	BI Brush	3	1,595
1957	Simi Valley Ranch	1	468
1958	Santa Rosa	1	1,138
1958	Calumet Canyon	0	17,214
1958	Brea Canyon	0	1,244
1967	Sence Ranch	9	18,354
1970	Clampitt Fire	3	115,537
1973	Santa Rosa	3	424
1976	Arroyo	3	206
1980	Hill Canyon	4	11,975
1984	Grimes Fire	4	11,305
1985	Peach Hill	1	1,992
1987	Tierra	2	759
1995	Wildwood 1	8	799
2001	Walnut Incident	6	36
2003	Simi Fire	2	107,570
2006	Shekell	3	13,618
2009	Guiberson	3	17,527
2011	Collins	2	60
2013	Happy Camp	2	45
2015	Princeton	2	44

[3] Based on polygon GIS data from CAL FIRE's FRAP, which includes data from CAL FIRE, USDA Forest Service Region 5, BLM, NPS, Contract Counties and other agencies. The data set is a comprehensive fire perimeter GIS layer for public and private lands throughout the state and covers fires 10 acres and greater between 1878–2018.

Table 2. Fire History within Five Miles of the Hitch Ranch Project Site

Fire Year*	Fire Name	Interval (years)	Total Area Burned (acres)
2018	Collins	3	11
2018	Olsen	0	28
2018	Hill	0	4,310

1 *CAL FIRE FRAP 2019

Based on an analysis of this fire history data set, specifically the years in which the fires burned, the average interval between wildfires in the area was calculated to be 3 years with intervals ranging between 0 to 9 years. Based on this analysis, it is expected that wildland areas in the vicinity of the project site will be subject to wildfire at least every 3 years with the realistic possibility of shorter interval occurrences, as observed in the fire history record. Based on fire history, wildfire risk for the project site is associated primarily with a Santa Ana wind-driven wildfire burning or spotting onto the site from the north or east, although a fire approaching from the south during more typical on-shore weather patterns is possible.

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3 Determination of Project Effects

FPPs provide an evaluation of the adverse environmental effects a proposed project may have from wildland fire. The FPP describes the project design features that would ensure that the project would not unnecessarily expose people or structures to a significant loss, injury or death involving wildland fires. Significance is determined by answering the following guidelines:

Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The wildfire risk in the vicinity of the Hitch Ranch Project site has been analyzed according to a standard used throughout Ventura County (County of Ventura Initial Study Assessment Guidelines – Fire Hazards (2011)). According to the CALFIRE Fire Severity Zone Map, the proposed project is located in an area considered a VHFHSZ, as designated by CALFIRE and the VCFD. The wildland fire risk in the vicinity of the project site has been analyzed and it has been determined that wildfires may occur in wildland or naturally vegetated areas north of the Proposed Project site and in areas off-site to the west, east, and northeast of the project site. However, wildfire occurrence would not be expected to be significantly increased in frequency, or size with the construction of the Hitch Ranch Proposed Project. The closest off-site fuels that form large fuel beds are located to the north of the site.

The site currently includes a variety of potential vegetation that could serve as fuel sources. The types of potential ignition sources that currently exist in the area include vehicle and roadway, the Union Pacific ROW, off-site commercial areas, off-site residential neighborhoods, and arson related ignitions. Although the Proposed Project would introduce more people in the area and would include the development of 328 single-family dwelling units and 427 multi-family dwelling lots, the site would be largely converted from readily ignited fuels to ignition resistant structures and landscaped areas. The Proposed Project would be developed to meet all existing development building codes and fire codes, including landscaping and vegetation requirements as indicated in *Ventura County Fire Protection District Ordinance Number 31~~30~~* (or current adopted ordinance) adopted California Fire Code and CCR Title 14 FSR. The project would include conversion of fuels to maintained urban development with designated landscaping and fuel modification areas. Fuel modification zones will be designed according to all applicable development codes and the Ventura County Fire Code, and indicated on the project site plan. The Project Developer will perform fuel modification work throughout the project site prior to construction and the Hitch Ranch HOA will conduct annual fuel modification (or more often as needed) to reduce the potential for fire ignition and spread.

The Proposed Project would introduce potential ignition sources, but would include a variety of fire protection features that form a redundant system of protection to minimize the likelihood of wildfire exposing residents and visitors, as well as structures to a significant risk of loss, injury, or death involving wildland fires. The Project will provide a fire hardened landscape, highly ignition resistant residential dwelling units, and conversion of flashy fuels (non-native grasslands) to maintained developed areas with designated review of all landscaping and maintenance of fuel modification areas. Fires from off-site would not have continuous fuels across this site and would therefore be expected to burn around and/or over the site via spotting. Burning vegetation embers may land on project structures, but are not likely to result in ignition based on ember decay rates and the types of non-combustible and ignition resistant materials that will be used on site. The site further provides multiple ingress/egress routes for evacuation for better access throughout the site and there will be more fire aware individuals on the ground to reduce the likelihood of arson, off-road vehicles, or other recreational based activity fires. If evacuation is not considered the preferred approach, such as during a short-notice evacuation, the Hitch Ranch Project offers a contingency option of temporarily sheltering on site to residents,

visitors, firefighters and law enforcement, as well as to neighboring property owners. These concepts are discussed further in the following sections.

The project would comply with applicable ignition resistant fire and building codes and would include a layered fire protection approach which is designed to current codes and inclusive of site-specific measures that will result in a project that is less susceptible to wildfire than surrounding landscapes. Additionally, residential dwelling units are constructed to very high levels of ignition resistance and may be used as safe sites or temporary shelter if necessary. The Project's single- and multi-family residential units will include residential fire protection systems. This same fire protection system will provide protections from on-site fire spreading to off-site vegetation. As such, accidental fires within the maintained landscape or structures in the Hitch Ranch Project would have limited ability to spread.

Therefore, the Proposed Project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Would the project result in inadequate emergency access?

The Proposed Project would result in the development of a currently undeveloped area, including the development of site access. The project would involve the construction of new structures, roadways, and would generate new trips to and from the project site. The project site would be accessible from public roadways and access into the site would be provided via four entrances for vehicles and pedestrians. The project would be required to comply with the County's development review process, including review for compliance with the Ventura County Fire Apparatus Access Code - Ordinance 29 as well as compliance with applicable emergency access standards that would facilitate emergency vehicle access during project construction and operation. Additionally, an adequate water supply and an approved paved access roadway shall be installed prior to any combustibles on site.

The project applicant would be required to design, construct, and maintain structures, roadways, and facilities to comply with applicable local, regional, state, and federal requirements related to emergency access. Drive aisles, turning radii, and all access points would be designed with adequate emergency access. The project would be required to provide fire apparatus turnarounds on all dead-end fire apparatus access roadways over 150 feet in length~~, although the Fire Code Official is authorized to increase the length of a dead-end fire apparatus access roadway to a length of 250 feet,~~ and provide a 50~~40~~ foot inside~~horizontal~~ turning radius of a fire apparatus access road, measured at the center line of the access road (per CCR Title 14 FSR). All ~~access roadways designed for one way traffic shall have an unobstructed width of not less than 20 feet; all~~ access roadways designed for two-way traffic shall have an unobstructed width of not less than 24 feet. Fire access roadways designed to allow parking shall provide a minimum clear width of not less than 32 feet for parking on one side and a clear width of not less than 36 feet for parking on both sides. All fire access roadways would have a vertical clearance of not less than 13 feet 6-inches for the full road width to allow access for fire apparatus. The proposed site plan is subject to approval by the County and the VCFD. Further, the project would be required to provide walking access to the rear of buildings, and ladder access for any windows facing the rear of the buildings.

The County and the VCFD will need to review proposed modifications to existing roadways to ensure that adequate emergency access or emergency response would be maintained. Additionally, emergency response procedures would be coordinated through the County in coordination with the police and fire departments. Adherence to these requirements would ensure that that the project would not result in inadequate emergency access.

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

Fire protection would be provided to the proposed project via the VCFD. The VCFD consists of a staff of ~~395~~450 full-time safety (including safety Chief Officers) and ~~158~~133 full-time non-safety employees that provides fire protection and emergency medical services to more than ~~480,000~~850,000 people in ~~the unincorporated areas of~~ Ventura County. The VCFD response area covers 848 square miles including all unincorporated areas~~seven of its incorporated~~ cities, including Ojai, Port Hueneme, Moorpark, Camarillo, Santa Paula, Simi Valley, and Thousand Oaks (VCFD Overview and VCFD ~~2017~~2020 District Snapshot Report~~Annual Report~~). The Hitch Ranch Project includes 328 single-family dwelling units 427 multi-family dwelling lots (191 medium density units and 236 high density units). Service level requirements can cause a decline in the response times and capabilities for existing residents. The Proposed Project estimated call volume generation is based on 2,378~~2,333~~ maximum persons living on site (based on 3.15~~09~~ persons per household) during any given time period during the week and on weekends. The entire population would be new to the VCFD's response area. The Proposed Project is projected by call volume analysis (using VCFD per capita call generation factor of 0.056~~09~~/year or ~~90~~56 calls per 1,000 persons per year) to add approximately ~~210~~133 calls per year to the VCFD's existing call load. This call volume (approximately 2 to ~~4~~3 calls per week) is not considered enough of an increase to require additional resources.

The primary response (first due in) would be provided by Station 42, located at 295 E. High Street, Moorpark, California, approximately 1 mile east of the project site. The station is staffed daily by three firefighters and houses one engine (Engine 42), one reserve engine (Reserve Engine 142), and one brush engine (Brush Engine 342). The Project is projected to add an estimated 133~~210~~ calls per year (0.36~~58~~ calls per day) for a Station that currently responds to an existing call load of approximately ~~3.1~~3 calls per day (approximately 1,104~~1,129~~ calls per year in 2020~~2017~~). The addition of approximately 2 to 3~~4~~ calls per week is considered absorbable and the station's capacity to respond to the additional calls is available. This level of impact is not expected to require the construction of additional Fire Station facilities based on that increase alone. The anticipated ~~3.68~~3.36 calls per day (~~3.1~~3.0 daily calls + 0.36~~58~~ additional calls per day) is below what would be considered a busy station. For perspective, urban fire stations that respond to five calls per day are considered average and 10 calls per day would be considered a busy station. Further, Station 42 can respond to the entire project within Ventura County's target response time standard (8.5 minutes) for first arriving for all urban areas within Ventura County. Therefore, although there would be an incremental increase in call volume, it would not, according to California Environmental Quality Act (CEQA), be considered to exceed significance thresholds.

Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

The Proposed Project will be served by the Ventura County Waterworks District (VCWWD) No. 1 and sufficient water supplies will be available to serve the Proposed Project from the existing entitlements and resources, which will be consistent with VCFD requirements. The County of Ventura, and the VCWWD No. 1 require new developments to meet a minimum 2,500 gallons per minute (gpm) fire flow. The water distribution system is designed to yield a minimum residual pressure of 40 pounds per square inch (psi) during peak hour demands and a minimum residual pressure of 20 psi during maximum day demands plus fire flow. Each fire hydrant shall be capable of 1,500 gpm fire flow for minimum duration of three hours at 20 psi residual pressure.

The measures described in the responses to these significance questions are provided more detail in the following sections.

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4 Anticipated Fire Behavior

4.1 Fire Behavior Modeling

Following field data collection efforts and available data analysis, fire behavior modeling was conducted to document the type and intensity of fire that would be expected on and adjacent to the project site given characteristic site features such as topography, vegetation, and weather. Dudek utilized BehavePlus software package (Andrews, Bevins, and Seli 2004) to analyze potential fire behavior for the Hitch Ranch Project site. As is customary for this type of analysis, three fire scenarios were evaluated, including one summer, onshore weather condition (west from the project site) and two extreme fall, offshore weather condition (north and east/northeast of the project site), with assumptions made for the pre- and post-project slope and fuel conditions. Results are provided below and a more detailed presentation of the modeling inputs and results is provided in Appendix C.

4.1.1 Fuel Model Output Results

The results from the BehavePlus fire behavior modeling analysis for pre- and post-project conditions are presented in Tables 3 and 4, respectively, and in Figure 4, BehavePlus Fire Behavior Analysis Map. As presented, wildfire behavior on the Hitch Ranch Project site is expected to be primarily of moderate to high intensity throughout the non-maintained grass dominated fuels north and northeast of the Proposed Project site.

Table 3. BehavePlus Fire Behavior Modeling Results, Existing Conditions

Fire Scenario	Flame Length (feet)	Spread Rate (mph)[1]	Fireline Intensity (Btu/ft./s)	Spotting Distance[2] (Miles)
Scenario 1: 5% slope, Summer, Onshore, Summer Winds (Pre-Development)				
High Load Grass (Gr7)	29.1'	3.5	8,616	1.1
Scenario 2: 9% slope, Fall, Offshore Extreme Winds (Pre-Development)				
High Load Grass (Gr7)	42.9' (74.6' & 87.1')	6.0 (20.0 & 28.0)	20,054 (66,781 & 93,536)	1.2 (3.5 and 4.9)[3]
Scenario 3: 5% slope, Fall, Offshore, Extreme Winds (Pre-Development)				
High Load Grass (Gr7)	43.0' (74.6' & 87.1')	6.0 (20.0 & 28.0)	20,168 (66,846 & 93,591)	1.2 (3.5 & 4.9)

Note:
1 mph = miles per hour
2 Spotting distance from a wind driven surface fire.
3 It should be noted that the wind mph in parenthesis represent peak gusts of 50 mph and 70 mph, respectively.

Table 4. BehavePlus Fire Behavior Modeling Results, Post-Project Conditions

Fire Scenario	Flame Length (feet)	Spread Rate (mph)[1]	Fireline Intensity (Btu/ft./s)	Spotting Distance[2] (Miles)
Scenario 1: 5% slope, Summer, Onshore, Summer Winds (Post-Development)				
FMZ Zones ~~0A and B~~ (FM8)	1.8'	0.1	20	0.2
FMZ Zones 1 and 2 (Gr1)	1.9'	0.2	24	0.2
FMZ Zone 3~~C~~ (Gr2)	7.2'	1.1	420	0.4
Scenario 2: 9% slope, Fall, Offshore Extreme Winds (Post-Development)				
FMZ Zones ~~0A and B~~ (FM8)	2.1' (3.0' & 3.0')	0.1 (0.2 & 0.2)	29 (63 & 63)	0.2 (0.4 & 0.5)
FMZ Zone 1 and 2	4.0' (4.0' & 4.0')	0.7 (0.7 & 0.7)	115 (115 & 115)	0.2 (0.5 & 0.6)
FMZ Zone 3~~C~~ (Gr2)	10.9' (18.0' & 18.0')	2.1 (6.2 & 6.2)	1,012 (3,037 & 3,037)	0.5 (1.3 & 1.6)
Scenario 3: 5% slope, Fall, Offshore, Extreme Winds (Post-Development)				
FMZ Zones ~~0A and B~~ (FM8)	2.1' (3.0' & 3.0')	0.1 (0.2 & 0.2)	29 (63 & 63)	0.2 (0.4 & 0.5)
FMZ Zone 1 and 2	4.0' (4.0' & 4.0')	0.7 (0.7 & 0.7)	115 (115 & 115)	0.2 (0.5 & 0.6)
FMZ Zone 3~~C~~ (Gr2)	10.9' (18.0' & 18.0)	2.1 (6.2 & 6.2)	1,018 (3,037 & 3,037)	0.5 (1.3 & 1.5)

Note:

1 mph = miles per hour

2 Spotting distance from a wind driven surface fire.

3 It should be noted that the wind mph in parenthesis represent peak gusts of 50 mph and 70 mph, respectively.

The results presented in Tables 3 and 4 depict values based on inputs to the BehavePlus software and are not intended to capture changing fire behavior as it moves across a landscape. Changes in slope, weather, or pockets of different fuel types are not accounted for in this analysis. For planning purposes, the averaged worst-case fire behavior is the most useful information for conservative fuel modification design. Model results should be used as a basis for planning only, as actual fire behavior for a given location will be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns.

Based on the BehavePlus analysis, worst-case fire behavior is expected in non-maintained grass north and northeast of the proposed Project site under Peak weather conditions (represented by Fall Weather, Scenario 3). The fire is anticipated to be a wind-driven fire from the north/northeast during the fall. Under such conditions, expected surface flame lengths reach 74 feet with wind speeds of 50+ mph. Under this scenario, fireline intensities reach 66,781 BTU/feet/second with fast spread rates of 20 mph and could have a spotting distance up to 3.5 miles away. Fires burning into brush thinning zones of the proposed FMZs are expected to be less intense and generate lower flame lengths.

As previously mentioned, Dudek conducted modeling of the site for post-fuel modification zones. Typical fuel modification includes establishment of minimum 100-foot wide irrigated zone (Zones 0, 1 and 2~~A and B~~) and up to a 100-foot wide thinning zone (Zone 3~~C~~) on the periphery of the project site, beginning at the structure. For modeling the post-FMZ treatment condition, the fuel model assignment for non-native grasslands was re-classified according to the specific fuels management (e.g., irrigated, fire resistive landscaping and 50% thinning) treatment.

Based on the BehavePlus analysis, post development fire behavior is expected in irrigated and replanted with plants that are acceptable with VCFD (Zone 0 – FM8 and Zones 1 and 2~~A and B~~ ~~–~~ Gr1~~FM8~~), as well in an area with 50% thinning of the existing shrubs (Gr2) under peak weather conditions (represented by Fall Weather, Scenario 3b). Under such conditions, expected surface flame length is expected to be significantly lower, with flames lengths reaching approximately 18 feet with wind speeds of 50+ mph. Under this scenario, fireline intensities reach 3,037 BTU/feet/second with relatively slow spread rates of 2.1 mph and could have a spotting distance up to 1.3 miles away.

As depicted in Table 4, the FMZ areas experience a significant reduction in flame length and intensity. The 74-foot flame lengths predicted for non-native grassland fuels during pre-treatment modeling for fire scenarios 2 and 3 are reduced to approximately 18 feet by the time FMZ (Zone 3~~C~~) is reached and to approximately three-feet by the time FMZ (Zones 0, 1 and 2~~A and B~~) are reached. These reduction of flame lengths and intensities are assumed to occur within the 200 feet of fuel modification (an irrigated Zones 0, 1, and 2~~ A and B~~ and 50% thinning Zone 3~~C~~).

4.2 On-Site Fire Risk Assessment

Given the climatic, vegetative, topographic characteristics, and local fire history of the area, the project site, once developed, is determined to be subject to periodic wildfires that may start on, burn onto, or spot into the site. The most common type of fire anticipated in the vicinity of the Project Area is a wind-driven fire from the north/northeast during the fall. Potential for off-site wildfire encroaching on, or showering embers on the site is considered moderate, but risk of ignition from such encroachments or ember showers is considered low based on the type of construction and fire protection features that will be provided for the structures.

Therefore, it will be critical that the latest fire protection technologies, developed through intensive research and real world wildfire observations and findings by fire professionals, for both ignition resistant construction and for creating defensible space in the ever-expanding WUI areas, are implemented and enforced. The Proposed Project will implement the latest fire protection measures, including fuel modification along the perimeter edges of the development.

Wildland fires are a common natural hazard in most of southern California with a long and extensive history. Southern California landscapes include a diverse range of plant communities, including vast tracts of tracts of grasslands and shrublands, like those found adjacent to Hitch Ranch site. Wildfire in this Mediterranean-type ecosystem ultimately affects the structure and functions of vegetation communities (Keeley 1984) and will continue to have a substantial and recurring role (Keeley and Fotheringham 2003). Supporting this are the facts that 1) native landscapes, from forest to grasslands, become highly flammable each fall and 2) the climate of southern California has been characterized by fire climatologists as the worst fire climate in the United States (Keeley 2004) with high winds (Santa Ana) occurring during autumn after a six-month drought period each year. Based on this research, the anticipated growing population of Ventura County wildland urban interface (WUI) areas, including in the City of Moorpark, and the regions fire history, it can be anticipated that periodic wildfires will occur in the open space areas of Ventura County, with the natural open spaces north and northeast of the Hitch Ranch Project site being no exception.

Two large wildfires have burned on to and several more have burned within a close proximity to the project site, including the 2003 Simi Fire which burnt approximately 107,500 acres and the most recent Easy Fire which burned approximately 1,700 acres 1 mile east of the Project site in October 2019. Both of these fires burned very similarly to the results found in the modeled fire behavior for non-native grasslands under extreme weather conditions. As such, wildlands near the

Proposed Project site are expected to be exposed to periodic wildfire ignition and spread and may be subject to nearby wildfire. However, the Hitch Ranch Proposed Project site, once developed, would not facilitate wildfire spread and would reduce projected flame lengths to levels that would be manageable by firefighting resources for protecting the site's structures, especially given the ignition resistance of the structures and the planned ongoing maintenance of the entire site landscape.

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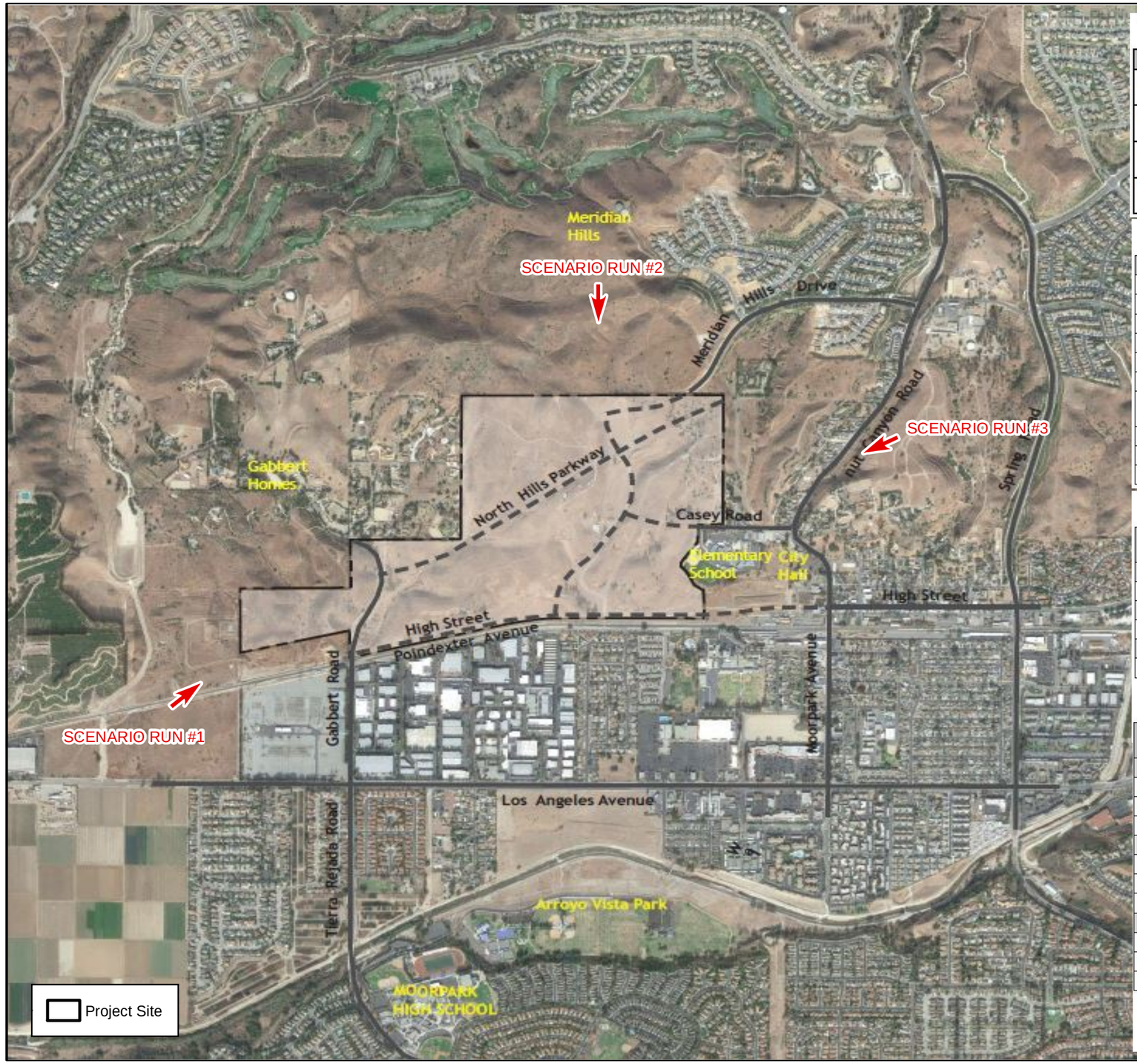

SOURCE: AERIAL-GOOGLE MAPPING SERVICE 2019

DUDEK 0 500 1000 2000 Feet

Table 1. Existing Fuel Model Characteristics

Fuel Model	Description	Location	Fuel Bed Depth (Feet)
Gr7	High Load, Dry Climate Grass	Fuel type is concentrated throughout the Project site.	>5.0 ft.
Gr2	Low Load, Dry Climate Grass	Fuel type will occur post development within 50% thinning Zone 3.	1.0 ft.
Gr1	Sparse, Dry Climate Grass	Fuel type will occur post development within irrigated Zones 1 and 2	
FM8	Irrigated Landscape	Fuel type will occur post development within irrigated Zone 0.	<1.0 ft.

Table 2. BehavePlus Fine Dead Fuel Moisture Calculation

Model Variable	Summer Weather (50th Percentile)	Peak Weather (97th Percentile)
Fuel Models	Gr7, Gr1, Gr2, and FM8	Gr7, Gr1, Gr2, and FM8
1 h fuel moisture	5%	1%
10 h fuel moisture	6%	2%
100 h fuel moisture	11%	4%
Live herbaceous moisture	60%	30%
Live woody moisture	90%	60%
20 ft. wind speed	24 mph (sustained winds)	19 mph (sustained winds); 50 and 70 mph (gusty winds)
Wind Directions from upslope (degrees)	60	180, 235
Wind adjustment factor	0.4	0.4
Slope (uphill)	5%	5 and 9%

Table 4. BehavePlus Fire Behavior Modeling Results, Existing Conditions

Fire Scenario	Flame Length (feet)	Spread Rate (mph)[1]	Fireline Intensity (Btu/ft./s)	Spotting Distance[2] (Miles)
Scenario 1: 5% slope, Summer, Onshore, Summer Winds (Pre-Development)				
High Load Grass (Gr7)	29.1'	3.5	8,616	1.1
Scenario 2: 9% slope, Fall, Offshore Extreme Winds (Pre-Development)				
High Load Grass (Gr7)	42.9' (74.6' & 87.1')	6.0 (20.0 & 28.0)	20,054 (66,781 & 93,536)	1.2 (3.5 and 4.9)[3]
Scenario 3: 5% slope, Fall, Offshore, Extreme Winds (Pre-Development)				
High Load Grass (Gr7)	43.0' (74.6' & 87.1')	6.0 (20.0 & 28.0)	20,168 (66,846 & 93,591)	1.2 (3.5 & 4.9)

Table 5. BehavePlus Fire Behavior Modeling Results, Post-Project Conditions

Fire Scenario	Flame Length (feet)	Spread Rate (mph)[1]	Fireline Intensity (Btu/ft./s)	Spotting Distance[2] (Miles)
Scenario 1: 5% slope, Summer, Onshore, Summer Winds (Post-Development)				
FMZ Zone 0 (FM8)	1.8'	0.1	20	0.2
FMZ Zones 1 and 2 (Gr1)	1.9'	0.2	24	0.2
FMZ Zone 3 (Gr2)	7.2'	1.1	420	0.4
Scenario 2: 9% slope, Fall, Offshore Extreme Winds (Post-Development)				
FMZ Zone 0 (FM8)	2.1' (3.0' & 3.0')	0.1 (0.2 & 0.2)	29 (63 & 63)	0.2 (0.4 & 0.5)
FMZ Zone 1 and 2 (Gr1)	4.0' (4.0' & 4.0')	0.7 (0.7 & 0.7)	115 (115 & 115)	0.2 (0.5 & 0.6)
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Scenario 3: 5% slope, Fall, Offshore, Extreme Winds (Post-Development)				
FMZ Zone 0 (FM8)	2.1' (3.0' & 3.0')	0.1 (0.2 & 0.2)	29 (63 & 63)	0.2 (0.4 & 0.5)
FMZ Zone 1 and 2 (Gr1)	4.0' (4.0' & 4.0')	0.7 (0.7 & 0.7)	115 (115 & 115)	0.2 (0.5 & 0.6)
FMZ Zone 3 (Gr2)	10.9' (18.0' & 18.0)	2.1 (6.2 & 6.2)	1,018 (3,037 & 3,037)	0.5 (1.3 & 1.5)

Note:
1 mph = miles per hour
2 Spotting distance from a wind driven surface fire.
3 It should be noted that the wind mph in parenthesis represent peak gusts of 50 mph and 70 mph, respectively.

FIGURE **4**
BehavePlus Analysis Map
Hitch Ranch Proposed Project Fire Protection Plan

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5 Emergency Response and Service

5.1 Emergency Response

The Proposed project is located within the jurisdiction of the VCFD, and consequently, VCFD provides initial response. The VCFD jurisdictional response area encompasses approximately 848 square miles including seven of its cities, including Ojai, Port Hueneme, Moorpark, Camarillo, Santa Paula, Simi Valley, and Thousand Oaks with a population of more than 850,000~~480,000~~ people in ~~the unincorporated areas of~~ Ventura County (VCFD Overview, 2020 and VCFD 2020~~2017~~ Snapshot Annual Report)[4]. The VCFD consists of a staff of 450~~395~~ full-time safety (including safety Chief Officers) and 133~~158~~ full-time non-safety employees that provides fire protection and emergency medical services. The Hitch Ranch Project includes 328 single-family dwelling units and 427 multi-family dwelling lots (191 medium density units and 236 high density units). Service level requirements can cause a decline in the response times and capabilities for existing residents. The Proposed Project estimated call volume generation is based on 2,378~~2,333~~ maximum persons living on site (based on 3.15~~09~~ persons per household) during any given time period during the week and on weekends. The entire population would be new to the VCFD's response area. The Proposed Project is projected by call volume analysis (using VCFD per capita call generation factor of 0.056~~09~~/year or 56~~90~~ calls per 1,000 persons per year) to add approximately 133~~210~~ calls per year to the VCFD's existing call load. This call volume (approximately 2 to 3~~4~~ calls per week) is not considered enough of an increase to require additional resources.

The VCFD currently operates 34~~33~~ Fire Stations, two of which are analyzed herein due to their proximity to the proposed project site and could respond to an incident at the Hitch Ranch Project site (Stations 40 and 42), although primary response would be from Station 42, with Station 40 responding shortly thereafter. Station 42 is located at 295 E. High Street, Moorpark, California, approximately 1 mile east of the project site. The station is staffed daily by three full-time firefighters and houses one engine (Engine 42), one reserve engine (Reserve Engine 142), and one brush engine (Brush Engine 342). Table 5 presents a summary of the location, fire apparatus equipment, staffing levels, maximum travel distance, and estimated time travel for the two closest VCFD stations that would respond to a fire or medical emergency within the Hitch Ranch Project site. Travel distances are derived from Google road data while travel times are calculated applying the nationally recognized RAND Corporation formula used by the Insurance Services Office (ISO) Public Protection Classification Program's Response Time Standard: (T=0.65 + 1.7D), where T=time and D=distance). The ISO response travel time formula discounts speed for intersections, vehicle deceleration and acceleration, and does not include turnout donning time.

[4] https://vcfd.org/about-vcfd/overview and https://vcfd.org/wp-content/uploads/2021/08/AnnualReport2020.pdf

Table 5. Ventura County Fire Department Responding Stations Summary

Station	Location	Equipment	Staffing	Maximum Travel Distance	Travel Time***
Station 40	4185 Cedar Springs Street, Moorpark, California, 93201	- Medic/Engine (Medic/Engine 40); - Reserve Engine (Engine 140); - Utility Pickup Truck (Utility 40); - USAR Tractor/Trailer (USAR 40).	On duty: 3	2.30. 70 mi.**	14 minute 4831 secs.**
Station 42	295 E. High Street, Moorpark, California, 93021	- Engine (Engine 42); - Reserve Engine (Engine 142); - Brush Engine (Engine 342).	On-duty: 3	1.50 mi.*	3 minutes 10 secs.*

* Distance measured to the proposed western entrance of the proposed development area off Gabbert Road.
** Distance measured to the proposed eastern entrance of the proposed development area off Casey Road.
*** Assumes travel to the project entrance, and application of the ISO formula, T=0.65+1.7(Distance), a 35-mph travel speed, and does not include turnout time.

Based on the Proposed Project site location in relation to existing VCFD stations, travel time to the site for the first responding engine from Station 42 is approximately 3 minutes and 10 secondsless than 2 minutes to the proposed project entrance, on Casey Road. Travel within the development may reach up to 2 minutes, based on the longest proposed road stretch of approximately 0.80 miles, resulting in response time of approximately 5 minutesless than 4 minutes for the entire development. Secondary response would arrive in approximately 4 minutes and 30 secondsless than 4 minutes. Based on these calculations, emergencies within the project can be responded to by VCFD's first arriving unit (average maximum initial response of no more than 8.5 minutes for fire apparatus and 5 minutes for ambulance, 90% of calls) in accordance with the County's standard.

In addition, there are automatic aid agreements and dropped boundary agreements on first alarm or greater emergency calls with surrounding communities, ensuring that the closest unit will be dispatched, regardless of jurisdictional boundaries. The VCFD is also part of the State of California Master Mutual Aid Agreements.

5.2 Emergency Service Level

The VCFD estimates approximately 44,74247,272 total annual calls (VCFD's 20202017 Annual Report Snapshot) and Ventura County's population of approximately 480850,000 (VCFD Overview, 20222019). The per capita call volume is roughly 0.5609 for the County of Ventura. Based on the proposed development plans, the project's estimated 2,37833 residents (assumes an average of 3.1509 occupants per residence in the City of Moorpark for this type of community (U.S. Census, 2021SANDAG 2019) would generate roughly 133210 calls per year, most of which are expected to be medical-related calls, consistent with typical emergency call statistics.

Service level requirements are not expected to be significantly impacted with the increase of approximately 133210 calls per year or 0.3658 calls per day for a station (VCFD Station 42) that currently responds to roughly 3 calls per day (1,1041,130 calls[5] in 20202017) in its primary service area. Therefore, the project is not expected to cause a decline in VCFD's emergency response times. Additional response, rounding out the

[5] Data derived from VCFD's 20202017 annual report snapshot which states that there were 2,20859 calls within the Moorpark service area. There are two stations within the Moorpark service area, so a rough estimate of 1,10430 calls in 20202017 was used for Station 42.

effective firefighting force (the manpower needed to effectively fight a structure fire and/or respond to serious medical emergency) would be provided by Stations 40 and 57.

5.2.1 Cumulative Impacts on Fire Response

Cumulative impacts from multiple projects can cause fire response service decline and must be analyzed for each project. The Hitch Ranch Project and its proposed usage by up to 2,378~~33~~ residents is an increase in potential service demand of approximately 133~~210~~ calls per year, well within the capacity of the existing Fire Stations that will service the Hitch Ranch Project. Other future projects in the vicinity of Stations 40 and 42 are not known at the time of this FPPs preparation, but when considered cumulatively, the potential impact of multiple projects is considered less than significant, mitigated by increased funding available from each project to the VCFD through property taxes and other fees associated with each project, including the Hitch Ranch Project. This funding would be utilized to maintain or enhance fire response capabilities.

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6 Buildings, Infrastructure and Defensible Space

The Ventura County Fire Protection District's Fire Ordinance Number 31 (2018 International Fire Code and 2019 California Fire and Building Codes adopted by reference with several modifications) governs the building, infrastructure, and defensible space requirements detailed in this FPP. It should be noted that new State and local building and fire codes will be in effect starting January 1, 2023. The project will meet or exceed applicable codes or will provide alternative materials and/or methods. While these standards will provide a high level of protection to structures for the Proposed Project, there is no guarantee that compliance with these standards will prevent damage or destruction of structures by fire in all cases. A response map update, including roads and fire hydrant locations, in a format compatible with current department mapping shall be provided to the VCFD.

The following summaries highlight important fire protection features. All underground utilities, hydrants, water mains, curbs, gutters, and sidewalks will be installed, and the drive surface shall be approved prior to combustibles being brought on site.

6.1 Fire Access

6.1.1 Primary

The Proposed Project would result in the development of a currently undeveloped area, including the development of site access. The project would involve the construction of new structures, roadways, and would generate new trips to and from the project site. Site access, including road widths and connectivity, will comply with the County's development review process, including review for compliance with the Ventura County Fire Apparatus Access Code - Ordinance 29 as well as compliance with applicable emergency access standards that would facilitate emergency vehicle access during project construction and operation. Additionally, an adequate water supply and approved paved access roadways shall be installed prior to any combustibles on site and will include:

- The project site would be accessible from public roadways and access into the site would be provided via four entrances, one northbound on Gabbert Road, another northbound on Moorpark Avenue/Walnut Canyon Road, one westbound or eastbound on High Street, and one westbound or southbound on Meridian Hills Drive for vehicles and pedestrians. Primary access to the Project site via Gabbert Road will connect to the proposed extension of High Street (runs west to east) and North Hills Parkway (runs west to east/northeast). High Street will provide access to the southern portion of the Project site and will connect to Moorpark/Walnut Canyon (SR-23), while proposed North Hills Parkway is designed as an interior road and will facilitate access throughout the site. Primary access via Moorpark Avenue/Walnut Canyon Road will connect to Casey Road, which will be extended from its current terminus and provide access to the eastern portion of the site. Moorpark Avenue/Walnut Canyon Road also connects to Meridian Hills Drive, which will be extended from its current terminus and provide access to the northern portion of the site.
- All perimeter roads comply with all fire apparatus access road standards; ~~all fire access roadways designed for one-way traffic shall have an unobstructed width of not less than 20 feet;~~ all access roadways designed for

two-way traffic shall have an unobstructed width of not less than 24 feet. Fire access roadways designed to allow parking shall provide a minimum clear width of not less than 32 feet for parking on one side and a clear width of not less than 36 feet for parking on both sides. The access roads shall be designed for the weight load requirements of the California Vehicle Code, City Road Standards, or 75,000 pounds, whichever is more restrictive.~~capable of supporting an imposed load of at least 20 tons or 80,000 pounds (lbs.) after a 10-year storm.~~

- Interior circulation streets include all roadways that are considered common or primary roadways for traffic flow through the site and for fire department access serving all proposed structure. The project would be required to provide approved fire apparatus turnarounds on all dead-end fire apparatus access roadways over 150 feet in length~~, although the Fire Code Official is authorized to increase the length of a dead-end fire apparatus access roadway to a length of 250 feet~~.
- Typical, interior Project roads, including collector and local roads, will be constructed to minimum 36-foot, unobstructed widths and shall be improved with aggregate cement or asphalt paving materials. Private or public streets that provide fire apparatus access to buildings three stories or more in height shall be improved to a minimum 24 feet unobstructed width. All interior residential streets will be designed for the weight load requirements of the California Vehicle Code, City Road Standards, or 75,000 pounds, whichever is more restrictive~~to accommodate a minimum of at least 20 tons or 80,000 lb. fire apparatus load after a 10 year storm~~.
- Private and public streets for each phase shall meet all project approved fire code requirements and/or mitigated exceptions for maximum allowable dead-end distance, paving, and fuel management prior to combustibles being brought to the site.
- Vertical clearance of vegetation (lowest-hanging tree limbs), along roadways will be maintained at clearances of 13 feet, 6 inches to allow fire engines passage. Unobstructed vertical clearance must be clear to the sky to allow aerial ladder truck operation.
- Roads with a median or center divider will have a minimum 20 feet unobstructed width on both sides of the center median or divider. Maximum road grade will not exceed 16%.
- Cul-de-sacs and fire apparatus turnarounds will meet requirements and VCFD Standards.
- Roadways and/or driveways will provide fire department access to within 150 feet of all portions of the exterior walls of the first floor of each structure.
- Access roads shall be completed and paved prior to issuance of building permits and prior to the occurrence of combustible construction.

6.1.2 Secondary Access Roads and Gates

Two secondary emergency vehicle access entry/exit roads are proposed within PA1 and PA2, to provide additional access to North Hills Parkway from PA1 and "A" Street from PA1. The secondary access roads will include a secondary access gate with knox box switches allowing emergency vehicles access into and out of PA 1 and PA2, as well as an automatic exit loop system allowing the residents of PA1 and PA2 to exit the communities. If the private/secondary access gates

are to remain they will be required to be brought up to code and will comply with the Escondido Fire Code (Section 503.6) and EFD standards applicable at the time of building plan approval.

Any access gates will comply with Ventura County Fire Department 501 Apparatus Access Code Standard – Ordinance Number 29. Gates across fire apparatus access roads shall not be limited to emergency exit only and shall provide for egress for all persons at all times without the use of keys, codes, remote controls, or special knowledge. Gates on private roads and secondary access roads will comply with VCFD standard for electric gates and will include a Knox box switch and automatic exit loops.

6.1.3 Maximum Dead-End Road Length

Each planning area varies in the number of ingress/egress roads or streets. All areas shall include at least two ingress/egress streets. Dead end streets ~~no~~ longer than 150 feet shall have approved provisions for fire apparatus turnaround or cul-de-sac. ~~The Fire Code Official is authorized to increase the length of a dead end fire apparatus access roadway to a length of 250 feet.~~ When only one (1) access point is provided, the maximum length of access roads shall not exceed 800 feet from the point of two (2) separate means of ingress/egress.

Fire apparatus turnarounds to provide a 50~~40~~ foot inside~~horizontal~~ turning radius of a fire apparatus access road, measured at the center line of the access road, per CCR Title 14 FSR ~~(VCFD Fire Apparatus Access Code)~~.

6.1.4 Road Width and Circulation

On-site roads will be constructed to current Ventura County Fire Apparatus Access Code standards (Ordinance Number 29) and 2019 CFC (or then current edition), including all fire access roadways designed for one-way traffic shall have an unobstructed width of not less than 20 feet; all access roadways designed for two-way traffic shall have an unobstructed width of not less than 24 feet. Fire access roadways designed to allow parking shall provide a minimum clear width of not less than 32 feet for parking on one side and a clear width of not less than 36 feet for parking on both sides and shall be improved with asphalt paving materials that support the imposed loads of fire apparatus (not less than 4~~2~~0-tons or 80,000 lbs. after a 10-year storm). Turning radius for fire apparatus access roads will be 40 feet as measured at the center line of the access road.

Access to the site will be improved as indicated in the Moorpark's General Plan Circulation Element, North Hills Parkway would ultimately be constructed as a four-lane roadway. Gabbert Road would be improved to a four-lane arterial roadway from the point of connection with Poindexter Avenue, crossing the Union Pacific Railroad tracks, and continuing to North Hills Parkway. North of North Hills Parkway, Gabbert Road would taper back to its existing width.

The circulation upgrades not only benefit the Proposed Hitch Ranch Project, they also provide a public benefit to the surrounding communities and elementary school by providing additional access to these existing one-way in and out communities. Access to the Gabbert Canyon neighborhood to the northwest will be improved by expanding Gabbert Road to be a four-lane arterial roadway and by providing a new easterly evacuation route by extending High Street from its current terminus east of the project site across the southern boundary of the Project site north to the railroad track to Gabbert Road. The Meridian Hills neighborhood to the northeast will be improved by providing a southerly evacuation route through Hitch Ranch by extending Meridian Hills Drive from the existing terminus and connecting it to Street "A" at North Hills Parkway. Finally, Walnut Canyon Elementary school to the east is currently accessed by a dead end, two-lane road off Moorpark Avenue. There presently are no evacuation routes or secondary

vehicle access roads to the school. However, the Proposed Project would provide an additional evacuation route through the Hitch Ranch community by extending Casey Road from its terminus east of the project site west into PA2, PA3, and PA4.

6.1.5 Grade

There are no roads or driveways in the Hitch Ranch Project that exceed the 16% maximum grade for new roads and driveways. There are no roads or driveways that will require mitigation.

6.1.6 Surface

All fire apparatus access and vehicle roadways shall be asphalt or concrete and designed and constructed in accordance with County Public Works standards

6.1.7 Vertical Clearance

Minimum unobstructed vertical clearance of 13 feet 6 inches will be maintained for the entire required width for all streets, including driveways that require emergency vehicle access.

6.1.8 Premise Identification

Identification of roads and structures will comply with CFC, Section 505.1, as follows:

- Each Building shall have a minimum 12-inch address number, with 1-1/2 inch stroke. Number shall be mounted in visible locations and contrast in color to background. Each individual living unit shall have minimum 4-inch high address or unit numbers, ½-inch stroke, and 6 to 8 feet above grade.
- Streets and roads shall be identified with approved signs. Temporary signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles. Signs shall be of an approved size, weather resistant and be maintained until replacement by permanent signs.

6.2 Ignition Resistant Construction and Fire Protection Systems

All new structures within the Proposed Project will be constructed to Ventura County Fire Code, Ventura County Fire Protection District's Fire Ordinance 31, and 2019 CFC standards (or then current edition). Each of the proposed dwelling units will comply with the enhanced ignition-resistant construction standards of the 2019 California Building Code (Chapter 7A) (or then current edition). These requirements address roofs, eaves, exterior walls, vents, appendages, windows, and doors and result in hardened structures that have been proven to perform at high levels (resist ignition) during the typically short duration of exposure to burning vegetation from wildfires. While these standards will provide a high level of protection to structures in this development, there is no guarantee that compliance with these standards will prevent damage or destruction of structures by fire in all cases.

There are three~~two~~ primary concerns for structure ignition: 1) radiant and/or convective heat ~~and~~ 2) burning embers, and direct flame contact (VCFD, 2022) ~~(NFPA 1144 2008, Ventura County Fire Protection District 2011, IBHS 2008,~~

~~and others)~~. Burning embers have been a focus of building code updates for at least the last decade, and new structures in the Wildland Urban Interface[6] (WUI) built to these codes have proven to be very ignition resistant. Likewise, radiant and convective heat impacts on structures have been minimized through the Chapter 7A exterior fire ratings for walls, windows and doors. Additionally, provisions for modified fuel areas separating wildland fuels from structures have reduced the number of fuel-related structure losses. As such, most of the primary components of the layered fire protection system provided the project are required by the VCFD (Ventura County Fire Protection District Ordinance) Number 31~~30~~ and state codes, but are worth listing because they have been proven effective for minimizing structural vulnerability to wildfire and, with the inclusion of required interior sprinklers (required in the 2019 Building/Fire Code update), of extinguishing interior fires, should embers succeed in entering a structure. Even though these measures are now required by the latest Building and Fire Codes, at one time, they were used as mitigation measures for buildings in WUI areas, because they were known to reduce structure vulnerability to wildfire. These measures performed so well, they were adopted into the code. The following project features are required for new development in WUI areas and form the basis of the system of protection necessary to minimize structural ignitions as well as providing adequate access by emergency responders:

1. Application of Chapter 7A, ignition resistant building requirements
2. New class-A fire rated roof and associated assembly. With the proposed class-A fire rated roof, there will be attic or void spaces above the third level living spaces requiring ventilation to the outside environment. The attic spaces will require either ember-resistant roof vents or a minimum 1/16-inch mesh and shall not exceed 1/8-inch mesh for side ventilation (recommend BrandGuard, O'Hagin or similar vents) in accordance with the State Fire Marshal and Chapter 7A of the CBC. All vents used for this project will be approved by VCFD~~SMFD~~.
3. Multi- pane glazing with a minimum of one tempered pane, fire-resistance rating of not less than 20 minutes when tested according to NFPA 257 (such as SaftiFirst, SuperLite 20-minute rated glass product), or be tested to meet the performance requirements of State Fire Marshal Standard 12-7A-2
4. All buildings within the development are required to install an Automatic, Interior Fire Sprinkler System to code by occupancy type for all habitable, multi-family residential dwellings, in accordance with the CFC and VCFD Ordinance 31.
5. Modern infrastructure, access roads, and water delivery system.

6.3 Infrastructure and Fire Protection Systems Requirements

The following infrastructure components are made in order to comply with the Ventura County requirements, the 2019 California Fire Code (or then current edition), VCFPD's Fire Ordinance Standards (VCFD Ordinance Number 31), and nationally accepted fire protection standards, as well as additional requirements to assist in providing reasonable on-site fire protection.

[6] The Wildland-Urban interface is the area where urban and suburban development meets the undeveloped areas containing natural vegetation

6.3.1 Water

Water service for the Proposed Project site will be provided by the VCWWD No. 1 and will be consistent with VCFD requirements. The public water system will be through connections to existing water mains running along Gabbert Road, Meridian Hills Drive, and Moorpark Avenue/Walnut Canyon Road. The water distribution system is designed to yield a minimum residual pressure of 40 pounds per square inch (psi) during peak hour demands and a minimum residual pressure of 20 psi during maximum day demands plus fire flow. Each fire hydrant shall be capable of 1,500 gallons per minute (gpm) fire flow for minimum duration of two hours at 20 psi residual pressure.

6.3.2 Fire Hydrants

Hydrants shall be located along fire access roadways as determined by the VCFD Fire Marshal to meet operational needs, at the beginning radius of cul-de-sac streets, regardless of parcel size, pursuant to Sections 507.5.1 through 507.5.7 of the VCFPD Ordinance Number 31 and Appendix C of the 2019 CFC (or then current edition) for single- and multi-family residential units. Fire Hydrants will be consistent with applicable Design Standards.

6.3.3 Automatic Fire Sprinkler Systems

All structures, of any occupancy type, will be protected by an automatic, interior fire sprinkler system. All structures Automatic internal fire sprinklers would be in accordance with NFPA 13, 13-D, or 13-R and VCFD installation requirements as appropriate. Actual system design is subject to final building design and the occupancy types in the structure.

6.3.4 Residential Hazard Detectors

All residences will be equipped with residential smoke detectors and carbon monoxide detectors and comply with current CBC, CFC, and California Residential Code standards.

6.4 Ongoing Building and Infrastructure Maintenance

The project HOA shall be responsible for long term funding and maintenance of private roads and fire protection systems, including fire sprinklers and private fire hydrants.

6.5 Pre-Construction Requirements

Prior to bringing lumber or combustible materials onto the site, site improvements within the active development area shall be in place, including utilities, operable fire hydrants, an approved, temporary roadway surface, and fuel modification zones established. These features will be approved by prior to combustibles being brought on site.

6.6 Defensible Space and Vegetation Management

6.6.1 Fuel Modification Zones

An important component of a fire protection system for this Project is the provision for ignition resistant landscapes and modified vegetation buffers. FMZs are designed to provide vegetation buffers that gradually reduce fire intensity and flame lengths from advancing fire by strategically placing thinning zones, restricted vegetation zones, and irrigated zones adjacent to each other on the perimeter of the WUI exposed structures. FMZs are arguably more important when situated adjacent to older structures that were built prior to the latest ignition resistant codes and interior sprinkler requirements. All dwelling units within the Proposed Project site will be highly ignition resistant based on required construction design, materials, and methods.

The Proposed Project will be exposed to naturally-vegetated open space areas to the northern, eastern, and western portions of the site. The rest of the proposed development is adjacent to residential communities to the northwest, south, and east, the Moorpark County Club Course approximately half a mile to the north, and commercial buildings to the south. FMZs will be provided for those portions of the proposed development that are adjacent to open space areas in accordance with the VCFD's Ordinance 31 Appendix W, VCFD Standard 515 – Defensible Space and Fuel Modification Zones and Standard 517 – Application of Mulch and Chips in Defensible Space (revised February 2022), including all manufactured and maintained slopes. FMZs will include a minimum 200-foot fuel modification zones between the natural open space area to the north and on-site structures of PA1. Additionally, 100 feet of fuel modification (Zones 0, 1, and 2~~A and B~~ only) along the western portions of the site. The eastern edge of the Proposed Project will receive 68 to 121 feet of FMZs to the top of the grading limits. FMZs less than 100 feet will be augmented with mitigations that meet or exceed the level of protection 100 feet of fuel modification provides. These mitigations include window upgrades that are code-exceeding, dual pane, both panes tempered and a six-foot noncombustible fire wall, while some of the east side FMZs tie into existing development and will not require additional fire protection measures. The fuel modification zones will be constructed from the structure outwards towards undeveloped areas. Figure 5 illustrates the FMZ Plan proposed for the Proposed Project Site, including a five-foot Zone 0 (0 to 5 feet around the structures), a minimum 25~~30~~-foot wide limited planting area Zone 1~~A~~ (5 to 30 feet from the structures and decks), and a minimum 70-foot wide limited planting area Zone 3~~B~~ extending from the structures towards the undeveloped areas. If provided, either by the conditions of the development, voluntarily by the property owner, or required by the VCFD, a minimum 100-foot wide more progressive 50% thinning zone (Zone 3~~C~~) would lessen the spread of fire as it approaches the primary FMZ adjacent to structures. A 10-foot wide roadside FMZ along each side of the roads adjacent to the open space shall be required as well. It should be noted that the full 100-foot defensible space zone from project buildings is required by the VCFPD Ordinance 31. Any portion off-site will be the responsibility of that affected property owner. VCFD is proposing a development condition to have the Hitch Ranch Project be responsible for the potion of the 100-foot zone off-site until such time the affected off-site properties develop.

Based on the predicted fire intensity and duration along with flame lengths for this project site and the provided FMZs, the highest concern is considered to be from firebrands or embers as a principal ignition factor. To that end, this site, based on its location and ember potential, is required to include the latest ignition and ember resistant construction materials and methods for roof assemblies, walls, vents, windows, and appendages, as mandated by the VCFD and County's Fire and Building Codes (e.g., Chapter 7A).

6.6.1.1 VCFD Fuel Modification Zone Standards

A fuel modification zone (FMZ) is a strip of land where combustible vegetation has been removed and/or modified and partially or totally replaced with more adequately spaced, drought-tolerant, fire resistant plants in order to provide a reasonable level of protection to structures from wildland fire. The purpose of this section is to document VCFD's standards (Standards 515 and 517) and make them available for reference. However, we are proposing a site-specific fuel modification zone program with additional measures that are consistent with the intent of the standards. VCFD is consistent with the 2019 California Fire Code (Section 4907 — Defensible Space) (or then current edition), Government Code 51175 – 51189, and Public Resources Code 4291, which require that fuel modification zones be provided around every building that is designed primarily for human habitation or use within a VHFHSZ. Fuel modification consists of at least 100 feet, measured in a horizontal plane, from the exterior façade of all structures towards the undeveloped areas. A typical landscape/fuel modification installation per the County's Fire Code consists of a five-foot Zone 0 (0 to 5 feet around the structures), a ~~30~~25-foot-wide Zone 1A (5 to 30 feet from the structures and decks), and a 70-foot wide Zone 2~~B~~ (30 to 100 feet from the structures and decks) for a total of 100 feet in width. An additional 100-foot wide thinning zone (Zone 3~~C~~) is required for the areas adjacent to natural-vegetated, open space areas (north of PA1). Per VCFD, the full 100-foot defensible space zone from project buildings is required by the VCFPD Ordinance 31. Any portion off-site will be the responsibility of that affected property owner. VCFD is proposing a development condition to have the Hitch Ranch Project be responsible for the potion of the 100-foot zone off-site until such time the affected off-site properties develop

To ensure long-term identification and maintenance, a fuel modification area shall be identified by a permanent zone marker meeting the approval of VCFD. All markers will be located along the perimeter of the fuel modification area at a minimum of 500 feet apart or at any direction change of the fuel modification zone boundary. FMZs will be maintained on at least an annual basis or more often as needed to maintain the fuel modification buffer function.

Zone 0 – from the structure outward 5 feet

Zone 0 reduces the likelihood of structure ignition by reducing the potential for direct ignition of the structure from flame contact, by embers that accumulate at the base of a wall, and/or indirect ignitions when embers ignite vegetation, vegetation debris or other combustible materials located close to the structure that result in either a radiant heat and/or a direct flame contact exposure to the structure.

Zone 0 is the horizontal area within the first five feet around the structure, any outbuildings, and attached decks, and stairs. Zone 0 is measured from the edge of a structure, attached decks, patio covers, balconies, and floor projections above grade. The zone also includes the area under attached decks and stair landings.

The requirements and allowable items in the "lean" or no planting Zone 0 include the following:

a. Ground cover not exceeding three-inches in height

b. Non-woody small herbaceous or succulent plants not exceeding two (2) feet high. Plants shall be spaced a minimum of two-times the height from other plants.

c. Plants shall have a minimum clearance of two-times the plant height below and adjacent to windows or other openings into the structure, including vents.

d. All ground cover and plants shall be set back from structures and decks one-time the height of the plant or 12-inches, whichever is greater.

e. Vines and climbing plants are not allowed on structures, including decks, patio/shade structures, and any fences within 5 feet of a building.

f. No combustible landscape mulch or wood chips. Use clear soil, rocks, gravel, or concrete.

g. No trees. See Section 3.2.2a of VCFD Standard 515 regarding tree canopy setback from structures.

h. Firewood is prohibited in Zone 0.

i. Vegetation is prohibited underneath any deck.

j. Other fuels underneath decks may be limited and shall not cause an ignition due to embers.

k. Vegetation on decks shall meet the requirements of this zone regardless of the distance to the structure.

l. VCFD highly recommends no combustible fences and gates within five (5) feet of a structure or deck. The new State Zone 0 Regulations currently under development may prohibit these in 2023 and also may require removal of existing installations starting in 2024.

Note: As required by State Law, regulations for Zone 0 are under development by the State Board of Forestry and are scheduled to take effect January 1, 2023, for all new buildings and January 1, 2024, for all existing buildings. Any State regulation more restrictive than this standard will apply.

Zone 1~~A~~ – 5 feet from the structure outward to minimum 30 feet~~)~~

Zone 1~~A~~ reduces the likelihood of fire burning directly to the structure. This is accomplished by modifying fuels and creating a discontinuity between planting groups that limits the pathways for fire to burn to the structure and reduces the potential for near-to-building ember generation and radiant heat exposures. An additional purpose of this zone is to provide a defendable area for fire personnel to stage and take direct action.

Zone 1 is an area within 5 to 30 feet of structures and decks with slopes not greater than 20 percent; 5 to 50 feet from buildings and decks when slopes are greater than 20 percent. ~~is applicable site wide and is a limited planting area measured from the structure outward to 30 feet (horizontal), or to the property line in all directions.~~

The requirements and allowable items in a minimal planting and very limited trees of a fire-resistive type Zone 1 include the following:

a. Trees shall be spaced to allow a minimum 10-feet of clearance next to a structure.

b. Firewood shall be relocated outside Zone 1 unless completely covered in a secured, fire-resistant enclosure or covered with a secured, fire-resistant material, and not exceeding 1,000-cubic feet.

a. 0 to 5 feet from structure includes very low growing (three inch high), high water content ground cover and few small shrubs (two foot high). No landscape mulch or wood chips. Use clear soils, rocks, gravel, or concrete. No trees. This is a recommended no planting zone.

b.c. 5 to 30 feet from structure includes minimal plantings including ground cover and shrubs. Limited trees of a very fire resistive type and additional spacing. Trees should be spaced to allow a minimum 10 foot clearance to structure at full maturity. See Table 6, *VCFD FMZ Spacing Requirements*.

c.d. Plants and trees identified as "Target" (undesirable plants) by VCFD shall not be planted within Zone 1A. See Appendix D – VCFD's Suggested Plant Reference Guide and Appendix E – VCFD Prohibited Plant List.

Zone 2B – from outer edge of Zone 1A to 100 feet from structure

Zone 2 is designed to reduce the potential behavior of an oncoming fire in such a way as to drop an approaching fire from the crown of trees to the ground, reducing the flame heights, and the potential for ember generation and radiant heat exposure to structures. Additional benefits of the Zone 2include facilitating direct defense actions and improving the function of Zone 0 and 1. Zone 2 is the area from the outer edge of Zone 1 to 100 feet from structures and decks.B is applicable site wide and is the area measured from the outer edge of Zone A to 100 feet from the structure. This zone includes plantings including ground cover and shrubs. Limited trees of a very fire resistive type and additional spacing. Trees should be spaced to allow a minimum 10 foot clearance to structure at full maturity. See Table 36, *VCFD FMZ Spacing Requirements* of VCFD Standard 515..

Zone 3C – Thinning Zone (from outer edge of Zone 2B to 200 feet from structure)

Zone 3 is considered a thinning zone and is any FMZ greater than 100 feet from structures and decks. When provided, either by condition of development, voluntary by the property owner, or required by the Fire Department, this zone is more of a progressive thinning zone to lessen spread of fire as it approaches the primary FMZ adjacent to structures. The amount of fuel reduction and removal should take into consideration the type and density of fuels, aspect, topography, weather patterns, and fire history.C is considered a thinning zone and is any FMZ greater than 100 feet from structures. When provided, either by conditions of development, voluntary by the property owner, or required by the VCFD, this zone is more of a progressive thinning zone to lessen spread of fire as it approaches the primary FMZ adjacent to structures. The amount of fuel reduction and removal should take into consideration the type and density of fuels, aspect, topography, weather patterns, and fire history.

Table 6. VCFD Fuel Modification Zone Spacing Requirements

Type of Vegetation	Maximum Height (H)	Maximum Area / Diameter (W)	Slope Percentage / Minimum Spacing (S) [1]
Ground Cover	6 inches Max	N/A	N/A
Mosaic Grouping of Ground Cover (GC)	>6 18 inches	Groupings shall not exceed 500 square feet without minimum spacing (S) to next grouping	<20%: 2 x GC height (H) 20% 40%: 4 x GC height (H) >40%: 6 x GC height (H)
Single Shrub	6 feet Max	4 feet diameter	<20%: 2 x shrub height (H) 20% 40%: 4 x shrub height (H)

			>40%: 6 x shrub height (H)
Grouping of Shrubs	4 feet Max	Groupings shall not exceed 50 square feet without minimum spacing (S) to next grouping	<20%: 20 feet 20% 40%: 40 feet >40%: Not allowed
Single Tree	N/A	N/A	<20%: 10 feet 20% 40%: 20 feet >40%: 30 feet

[1] Spacing (S) Notes:
a. Spacing measured canopy at maturity
b. Ground cover up to 3 inches high, when approved, may be installed within the required clear space (S) between groups. If natural or annual grasses are used, they shall be mowed to a maximum height of 3 inches stubble with chippings removed.
c. Ground cover under tree canopies, when approved, shall have a clear distance above the ground cover a minimum 3 times the height of the ground cover (3H) to the lowest branch of the tree canopy and shall not be within 3 feet of the trunk of the tree.

Additional FMZ requirements:

- Highly flammable trees are not allowed unless approved by the Fire Code Official
- The horizontal distance between crowns of trees and crowns of adjacent trees, overhead electrical facilities, or unmodified fuel is not less than 15 feet.
- The vertical clearance distance above any roof is not less than 3 feet.
- The horizontal and vertical clearance to any chimney or heat producing device is not less than 10 feet.
- Trees exceeding 6 feet in height shall be limbed up from the ground 5 feet or 1/3 the height of the tree, whichever is less.
- All plants and trees shall be maintained free of deadwood, leaves, and limbs that can increase ability to ignite and/or carry fire. This includes dried palm fronds.
- Tree litter shall not exceed 2 inch depth underneath the canopies.
- Where tree canopies touch or extend past the 100 foot defensible space zone, there shall be a clear area from the edge of the tree canopy to the brush of not less than 15 feet; which may require clearance outside the 100 foot zone.
- Roofs and gutters on buildings shall be maintained free of any leaves, needles, or other vegetative materials.
- Mulch and wood chips shall comply with VCFD Standard 517. Not allowed within 5 feet of structures.
- Irrigation is not required for any defensible space or FMZ.

6.6.1.2 Other Vegetation Management

Roadway-Adjacent Defensible Space

As required under the Ventura County Fire Code, an area of 10 feet from each side of fire apparatus access roads and driveways in addition to an unobstructed vertical clearance of 13 feet, 6-inches above the roadways. Roadside fuel modification consists of mowing grasses to six-inches in height and/or maintaining ornamental landscapes, including trees, clear of dead and dying plant materials. Roadside fuel modification shall be maintained by the HOA.

Stormwater Basins

Fire-safe vegetation management will be performed within the basins on a yearly basis in accordance with the following guidelines.

1. Any portion of the stormwater basin that is within 100 feet of a structure will be required to comply with the full regulations for defensible space.

~~1.~~2. Groundcovers or shrubs included in the basin shall be low-growing with a maximum height at maturity of 18 ~~36~~ inches. Single tree specimens or groupings of two to three trees per grouping of fire resistive trees or tree form shrubs may exceed this limitation if they are located to reduce the chance of transmitting fire from vegetation to habitable structures and if the vertical distance between the lowest branches of the large, trees or tree form shrubs and the tops of adjacent plants are three times the height of the adjacent plants to reduce the spread of fire through ladder fueling.

~~2.~~3. All trees shall be planted and maintained at a minimum of 10 feet from the tree's mature drip line to any combustible structure.

~~3.~~4. The water detention basin area will be irrigated and maintained to brush management Zones 0, 1, and 2 standards.

~~4.~~5. Grasses must be maintained/mowed to 6 inches in height.

~~5.~~6. The water quality basins will not be re-vegetated with plant species that are found on the VCFD's Prohibited Plant List (Appendix E).

~~6.~~7. This area shall be maintained annually free of dying and dead vegetation.

~~7.~~8. Trees adjacent to the basin's access road shall be maintained at a vertical clearance of 13 feet, 6-inches for access into the interior of the basin.

Special Fuel Management Issues

On the Proposed Project site, tree planting in the fuel modification zones and along roadways is acceptable, as long as they meet the following restrictions as described below and in the County's Fire Code and the VCFD's Standard 515 – Defensible Space and Fuel Modification Zones spacing requirements:

- For streetscape plantings, trees should be planted 10 feet from edge of curb to center of tree trunk. Care should be given to the type of tree selected, that it will not encroach into the roadway, or produce a closed canopy effect.
- Crowns of trees located within defensible space shall comply with VCFD Standard 515 when located within Zones 0, 1, and 2; tree crowns must maintain a minimum horizontal clearance of 20~~15~~ feet for a single tree. Mature trees shall be pruned to remove limbs one-third the height or 6~~5~~ feet, whichever is less, above the ground surface adjacent to the trees.
- Dead wood and litter shall be regularly removed from trees.
- Ornamental trees shall comply with VCFD Standard 515 when located within Zones 0, 1, and 2; ornamental trees shall be limited to groupings of 2–3 trees with canopies for each grouping separated horizontally as described in Table 3 of the VCFD Standard 515~~6~~.

Specific Landscaping Requirements

The following requirements are provided for HOA-maintained fuel modification zones. All landscaping shall be maintained by the HOA.

Plants used in the fuel modification areas or landscapes will include drought-tolerant, fire resistive trees, shrubs, and groundcovers; no invasive plants to be included in the landscape. The planting list and spacing will be reviewed and approved by VCFD, included on submitted landscape plans. The plantings will be consistent with VCFD's ~~Suggested~~ Plant Reference Guide (Appendix D)[7]. The intent of the suggested plant reference guide is to provide examples of plants that are less prone to ignite or spread flames to other vegetation and combustible structures during a wildfire. Additional Plants can be added to the landscape plant material palette with the approval from VCFD.

Pre-Construction Requirements

- Perimeter fuel modification areas must be implemented and approved by the VCFD prior to combustible materials being brought on site.
- Existing flammable vegetation shall be reduced by 50% on vacant lots upon commencement of construction.
- Dead fuel, ladder fuel (fuel which can spread fire from ground to trees), and downed fuel shall be removed and trees/shrubs shall be properly limbed, pruned, and spaced per this plan.

Undesirable Plants

Certain plants are considered to be undesirable in the landscape due to characteristics that make them highly flammable. These characteristics can be physical or chemical. The plants included in the VCFD Prohibited Plant List (Appendix E) are unacceptable from a fire safety standpoint, and shall not be planted on the site unless otherwise approved by the VCFD[8].

6.6.2 Fuel Modification Area Vegetation Maintenance

All fuel modification area vegetation management shall be completed annually by May 1 of each year and more often as needed for fire safety, as determined by the VCFD.

The individual homeowners shall be responsible for all fuel modification vegetation management on their lots in compliance with this plan and the VCFD requirements. The Hitch Ranch Community HOA shall be responsible for all fuel modification vegetation management for all common areas, roadsides clearance, fuel modification zones, any retention basins, medians, planters, parks, etc. The HOA will assure private homeowner lots comply with this plan initially and on an ongoing basis. Chapter 7A requirements for ongoing maintenance of fire resistive building materials and fire sprinkler systems will be included in the C, C and R's and Deed encumbrances for each lot.

[7] Note that the current VCFD Plant Reference Guide may be updated, and the current versions must be used when designing and submitting landscape /fuel modification plans.
[8] Note that the current VCFD Prohibited Plant List may be updated, and the current versions must be used when designing and submitting landscape /fuel modification plans.

Additionally, the project HOA shall be responsible for ensuring long-term funding and ongoing compliance with fuel modification and maintenance requirements with all provisions of this report.

Maintenance of FMZ's and Defensible Space is an important component for long term fire safety of the Project. Maintenance obligations will be as follows:

Hitch Ranch HOA:

- Maintenance of access roads, includes a minimum of 10 feet clearance on each side of road(s).
- Annual Maintenance of FMZs (or as needed)
- Maintenance of all common areas, including trees planted along roadways and in other areas throughout project.

Resident/Homeowner:

- Maintenance of vegetation on individual property lots.

6.6.3 Annual Fuel Modification Zone Compliance Inspection

To confirm that the Proposed Project's FMZs and landscape areas are being maintained according to this FPPs and the VCFD's requirements, the VCFD will conduct annual inspections within the community to determine fuel modification zone compliance. ~~Project HOA would obtain an FMZ inspection and report from a qualified VCFD-approved 3rd party inspector in May of each year certifying that vegetation management activities throughout the project site have been performed.~~ If the FMZ areas are not compliant, the Hitch Ranch HOA will have a specified period to correct any noted issues so that a re-inspection can occur, and certification can be achieved. Annual inspection fees are subject to the current Fire Department Fee Schedule.

6.6.4 Construction Phase Vegetation Management

Vegetation management requirements shall be implemented at commencement and throughout the construction phase. Vegetation management for the Proposed Project area shall be performed pursuant to this FPP and VCFPD Ordinance 31, Appendix V for fire safety requirements in Hazardous Fire Areas that will be applicable ~~requirements on the property site~~ prior to the start of work, ~~and~~ prior to any import of combustible construction materials, and during construction. Adequate firebreaks ~~that are at least 50 feet wide~~ shall be created around all grading, site work, and other construction activities in areas where there is flammable vegetation. Combustible Materials will not be brought on site without prior fire department approval.

In addition to the requirements outlined above, the project will comply with the following important risk-reducing vegetation management guidelines:

- All new power lines shall be underground for fire safety during high wind conditions or during fires on a right-of-way that can expose aboveground power lines. Temporary construction power lines may be allowed in areas that have been cleared of combustible vegetation.
- Caution must be used not to cause erosion or ground (including slope) instability or water runoff due to vegetation removal, vegetation management, maintenance, landscaping, or irrigation.

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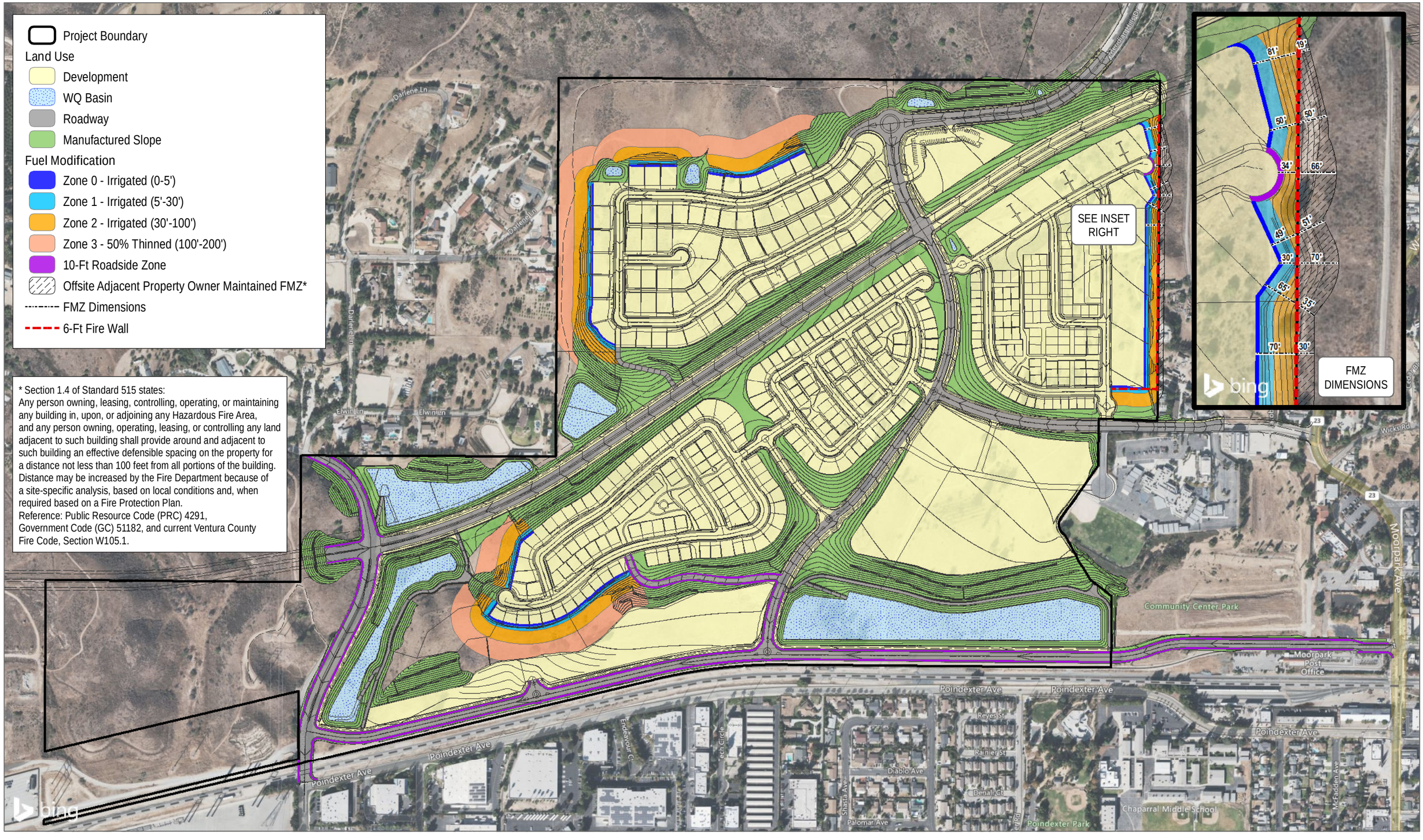

SOURCE: AERIAL -BING MAPPING SERVICE 2018; SITE PLAN - ENCOMPASS CONSULTANT GROUP 2021

DUDEK

0 230 460 Feet

FIGURE 5

Conceptual Fuel Modification Plan

Hitch Ranch Fire Protection Plan

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7 Alternative Materials and Methods for Non-Conforming Fuel Modification

As previously mentioned, due to site constraints, it is not feasible to achieve the standard FMZ width on the entire east side of the development within Planning Area 3. The Project's eastern property line can only provide an area between 68 and 121 feet of structural setback from off-site fuel beds. As such, this FPP describes additional measures that will be implemented to mitigate the non-conforming fire related threats and proposed reduced fuel modification zones. These measures are customized for this site based on the analysis results and focus on providing functional equivalency as a County-defined, full fuel modification zone.

As experienced in numerous wildfires, including the most recent fire storms in Ventura and San Diego Counties, homes in the WUI are potential fuel. The distance between the wildland fire that is consuming wildland fuel and the home ("urban fuel") is the primary factor for structure ignition (not including burning embers). The closer a fire is to a structure, the higher the level of heat exposure (Cohen 2000). However, studies indicate that given certain assumptions (e.g., 10 meters of low fuel landscape, no open windows), wildfire does not spread to homes unless the fuel and heat requirements (of the home) are sufficient for ignition and continued combustion (Cohen 1995, Alexander et al. 1998). Construction materials and methods can prevent or minimize ignitions. Similar case studies indicate that with nonflammable roofs and vegetation modification from 10–18 meters (roughly 32–60 feet) in southern California fires, 85–95% of the homes survived (Howard et al. 1973, Foote and Gilless 1996). Similarly, San Diego County after fire assessments indicate strongly that the building codes are working in preventing home loss: of 15,000 structures within the 2003 fire perimeter, 17% (1,050) were damaged or destroyed. However, of the 400 structures built to the 2001 codes (the most recent at the time), only 4% (16) were damaged or destroyed. Further, of the 8,300 homes that were within the 2007 fire perimeter, 17% were damaged or destroyed. A much smaller percentage (3%) of the 789 homes that were built to 2001 codes were impacted and an even smaller percentage (2%) of the 1,218 structures built to the 2004 Codes were impacted (IBHS 2008). Damage to the structures built to the latest codes is likely from flammable landscape plantings or objects next to structures or open windows or doors (Hunter 2007).

These results support Cohen's (2000) findings that if a community's homes have a sufficiently low home ignitability, the community can survive exposure to wildfire without major fire destruction. This provides the option of mitigating the wildland fire threat to homes/structures at the residential location without extensive wildland fuel reduction. Cohen's (1995) studies suggest, as a rule-of-thumb, larger flame lengths and widths require wider fuel modification zones to reduce structure ignition. For example, valid SIAM results indicate that a 20-foot high flame has minimal radiant heat to ignite a structure (bare wood) beyond 33 feet (horizontal distance). Whereas, a 70-foot-high flame may require about 130 feet of clearance to prevent structure ignitions from radiant heat (Cohen and Butler 1996). This study utilized bare wood, which is more combustible than the ignition resistant exterior walls for structures built today. Fire behavior modeling conducted for this project indicates that fires in the moderate to high load shrub and chaparral north of the Project Site would result in roughly 42- to 87-foot flame lengths under fall, extreme weather conditions. The proposed FMZ is twice the length of the predicted flame length.

As indicated in this report, the FMZs and additional fire protection measures proposed for the eastern portion of the development provide equivalent wildfire buffer but are not standard zones. Rather, they are based on a variety of analysis criteria including predicted flame length, fire intensity (Btu), site topography and vegetation, extreme and typical weather, position of structures on pads, position of roadways, adjacent fuels, fire history, current vs. proposed land use,

neighboring communities relative to the proposed project, and type of construction. The fire intensity research conducted by Cohen (1995) and Cohen and Butler (1996) supports the fuel modification alternatives proposed for this project.

7.1 Additional Structure Protection Measures

The following additional measures will be implemented to "mitigate" potential structure fire exposure related to the provided reduced FMZs for the eastern edge of the development. These measures are customized for this site, its unique topographical and vegetative conditions, and focus on providing functional equivalency as a full fuel modification zone. It should be noted that a fully developed Senior Living Project is proposed for development along the eastern edge of the Hitch Ranch development, from the existing homes off Casey Road up to the proposed North Hills Parkway. If that project site is under development prior to Hitch Ranch beginning construction in this area, then additional mitigations would not be necessary. If Hitch Ranch begins construction prior to the neighboring Senior Living Project development, then compensating measures are proposed. In order to provide compensating structural protection in the absence of a 100-foot wide FMZ, and in addition to the residences being built to the latest ignition resistant codes, these structures will also include the following features for additional fire prevention, protection, and suppression:

1. The proposed Triplex structures along the eastern edge of the development within PA3 that are adjacent to existing homes off Casey Road, shall be constructed with multi- pane glazing with a minimum of one tempered pane windows (see Figure 5);
2. The remaining Triplex structures along the eastern edge of the development within PA3 are exposed to natural vegetation. Depending on the timing of development of the proposed Senior Living project which currently is not developed, the remaining Triplex structures within the Hitch Ranch development along the eastern edge of the development shall implement either; a.) if the proposed Senior Living development begins construction prior to the Hitch Ranch Project development begins construction, then dual pane single tempered windows will be acceptable, or b.) if the Senior Living development has not begun construction prior to Hitch Ranch Project construction at this site, then dual pane, dual tempered windows will be required for the Hitch Ranch developments that are north of the existing homes off Casey Road up to proposed North Hills Parkway, exceeding the CBC Chapter 7A code requirement (see Figure 5).
3. Provide a noncombustible, 6-foot high concrete masonry unit (CMU) wall at the top of the manufactured slopes behind the units within PA3 along the eastern property boundary. These walls will be installed to function as heat-deflecting walls.

The information provided herein supports the ability of the proposed structures and FMZs to withstand the predicted short duration, low to moderate intensity wildfire and ember shower that would be expected from wildfire burning in the vicinity of the site or within the site's landscape.

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8 Homeowner's Association Wildfire Education Program

The residents and visitors of the Proposed Project will be provided a proactive educational component disclosing the potential wildfire risk and this report's requirements. This educational information must include maintaining the landscape and structural components according to the appropriate standards and embracing a "Ready! Set! Go!"[9] stance on evacuation. The "Ready! Set! Go!" informational packet and other VCFD standards and ordinances can be found on the VCFD's website at vcfd.org. VCFD will review and approve all wildfire educational material/programs before printing and distributing.

[9] https://vcfd.org/images/ready-set-go/VCFD-RSG-Wildfire-Action-Plan-Booklet-2016.pdf

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9 Conclusion

This FPP is submitted in support of an application for project entitlement of the Hitch Ranch mixed-density residential development project. It is submitted in compliance with requirements of the VCFPD Ordinance's and the Ventura County Fire Code. The requirements in this document meet fire safety, building design elements, fuel management/modification, and landscaping recommendations of the VCFD. Fire and Building Codes and other local, county, and state regulations in effect at the time of each building permit application supersede these recommendations unless the FPP recommendation is more restrictive. Where the project does not strictly comply with the Code, alternative materials and methods have been proposed that provide functional equivalency as the code intent.

The recommendations provided in this FPP have been designed specifically for the proposed construction of residential dwelling units within the vicinity of a very high fire hazard severity zone on the Proposed Project site. The project site's fire protection system includes a redundant layering of code compliant fire-resistant construction materials and methods that have been shown through post-fire damage assessments to reduce risk of structural ignition.

Ignition resistant landscaping would occur throughout the site. Fuel modification will be installed on the Proposed Project's perimeter which abuts open space located north and west of and adjacent to the project. The site's landscaping will be maintained throughout each year and an inspection will be funded by the Hitch Ranch Community HOA to ensure compliance with this FPP and fire safe plant palettes, planting densities and spacing.

The site improvements are designed to facilitate emergency apparatus and personnel access to all portions of the site. Three existing dead end roads that are adjacent to the site would be eliminated through interconnections, improving overall circulation and evacuation options. Roads and driveways meeting the code width standards and including fire engine turnarounds provide access to within 150 feet of all sides of every building.

Water availability and flow via the VCWWD No. 1 will be consistent with VCFD requirements including fire flow, residual pressure and hydrant distribution. These features along with the ignition resistance of all dwelling units, the interior sprinklers, and the pre-planning, training and awareness will assist responding firefighters through prevention, protection and suppression capabilities.

Ultimately, it is the intent of this FPP to guide, through code and other project specific requirements, the construction of structures that are defensible from wildfire and, in turn, do not represent significant threat of ignition source for the adjacent communities. It must be noted that during extreme fire conditions in a VHFHSZ, there are no guarantees that a given structure will not burn. Precautions and mitigating actions identified in this report are designed to reduce the likelihood that fire would impinge upon the proposed structures. There are no guarantees that fire will not occur in the area or that fire will not damage property or cause harm to persons or their property. Implementation of the required enhanced construction features provided by the applicable codes and the mitigating fuel modification requirements provided in this FPP will accomplish the goal of this FPP to assist firefighters in their efforts to defend these structures and reduce the risk associated with this project's WUI location. For maximum benefit, the developer, contractors, engineers, and architects are responsible for proper implementation of the concepts and requirements set forth in this report. Homeowners and HOA are responsible to maintain their structures and landscaping as required by this report, the applicable Fire Code, and the VCFD. While wildfires under extreme wind conditions can be unpredictable, the project has been designed with a layered system of

protections and would include the necessary features to perform well during wildfires. With these features, the project would be considered a "Fire Safe" project."

This FPP does not provide a guarantee that all residents or visitors will be safe at all times because of the advanced fire protection features it requires. There are many variables that may influence overall safety. This FPP provides requirements and recommendations for implementation of the latest fire protection features that have proven to result in reduced wildfire related hazard, resulting in reduced risk. Even then, fire can compromise the fire protection features through various, unpredictable ways. The goal is to reduce the likelihood that the system is compromised through implementation of the elements of this FPP and a regular occurring maintenance program

It is recommended that the homeowners or other occupants who may reside within the Hitch Ranch development adopt a conservative approach to fire safety. This approach must include maintaining the landscape and structural components according to the appropriate standards and embracing a "Ready, Set, Go" stance on evacuation. This project is not to be considered a shelter-in-place development. However, the fire agencies and/or law enforcement officials may, during an emergency, as they would for any new development providing the layers of fire protection as Hitch Ranch development, determine that it is safer to temporarily refuge clients or visitors on the site. When an evacuation is ordered, it will occur according to pre-established evacuation decision points or as soon as notice to evacuate is received, which may vary depending on many environmental and other factors. Fire is a dynamic and somewhat unpredictable occurrence and it is important for anyone living at the WUI to educate themselves on practices that will improve safety.

The goal of the fire protection features, both required and those offered above and beyond the Codes, provided for the Hitch Ranch Project is to provide the structures with the ability to survive a wildland fire with little intervention of firefighting forces. Preventing ignition to structures results in reduction of the exposure of firefighters and residents to hazards that threaten personal safety. It will also reduce property damage and losses. Mitigating ignition hazards and fire spread potential reduces the threat to structures and can help the fire department optimize the deployment of personnel and apparatus during a wildfire. The analysis in this FPP provides support and justifications for acceptance of the proposed fuel modification zones for Hitch Ranch development based on the site specific fire environment.

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10 List of Preparers

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Appendix A

Representative Site Photograph Log

PHOTOGRAPH LOG

Hitch Ranch Proposed Project FPP

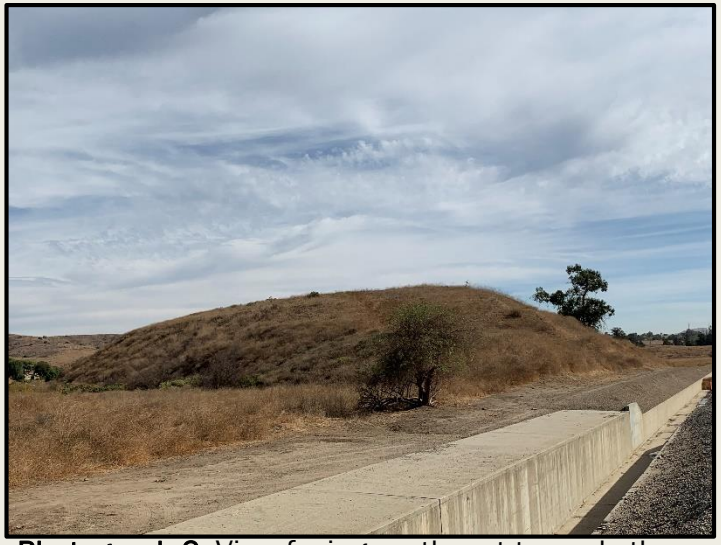
Photograph 1. View of southeastern corner of property. Photograph taken facing northwest.

Photograph 2. View of southern property boundary standing along Poindexter Ave. Photograph taken facing north.

Photograph 3. View looking northeast up hillside towards center of project site along southern boundary. Vegetation shown in photograph is non-native grassland.

Photograph 4. Photograph looking east down Poindexter Ave. along southern boundary, looking towards southeastern corner of the property.

Photograph 5. View facing northeast towards the center of the Hitch Ranch Project site, standing in the southwest corner of the property.



Photograph 6. View facing northeast towards the center of the Hitch Ranch Project site, standing in the southwest corner of the property.

Photograph 7. View looking east along southern project boundary and the proposed High street extension. Note the railroad track long the southern boundary.

Photograph 8. Photograph looking west down Poindexter Ave. towards the intersection with Gabbert Road.

Photograph 9. Photograph looking south down Gabbert Road, standing at the intersection of Gabbert Road and Poindexter Ave.

Photograph 10. Photograph looking north up Gabbert Road, standing at the intersection of Gabbert Road and Poindexter Ave.

Photograph 11. Photograph looking north up Gabbert Road, standing at the intersection of Gabbert Road and Poindexter Ave.

Photograph 12. Photograph of the northwest portion of the project site, adjacent to existing residential community. Photograph taken facing northeast.

Photograph 13. Photograph looking east towards center of the Hitch Ranch site.

Photograph 14. Another view Photograph looking east towards center of the Hitch Ranch site.

Photograph 15. Photograph of southeastern portion of the project site, standing along Poindexter Ave. Photograph facing northeast.

Photograph 16. Non-native grass fuels that are present throughout the project site. Photograph taken facing north.

Photograph 17. Another view of non-native grass fuels that are present throughout the project site. This photograph taken facing northeast along the eastern project boundary.

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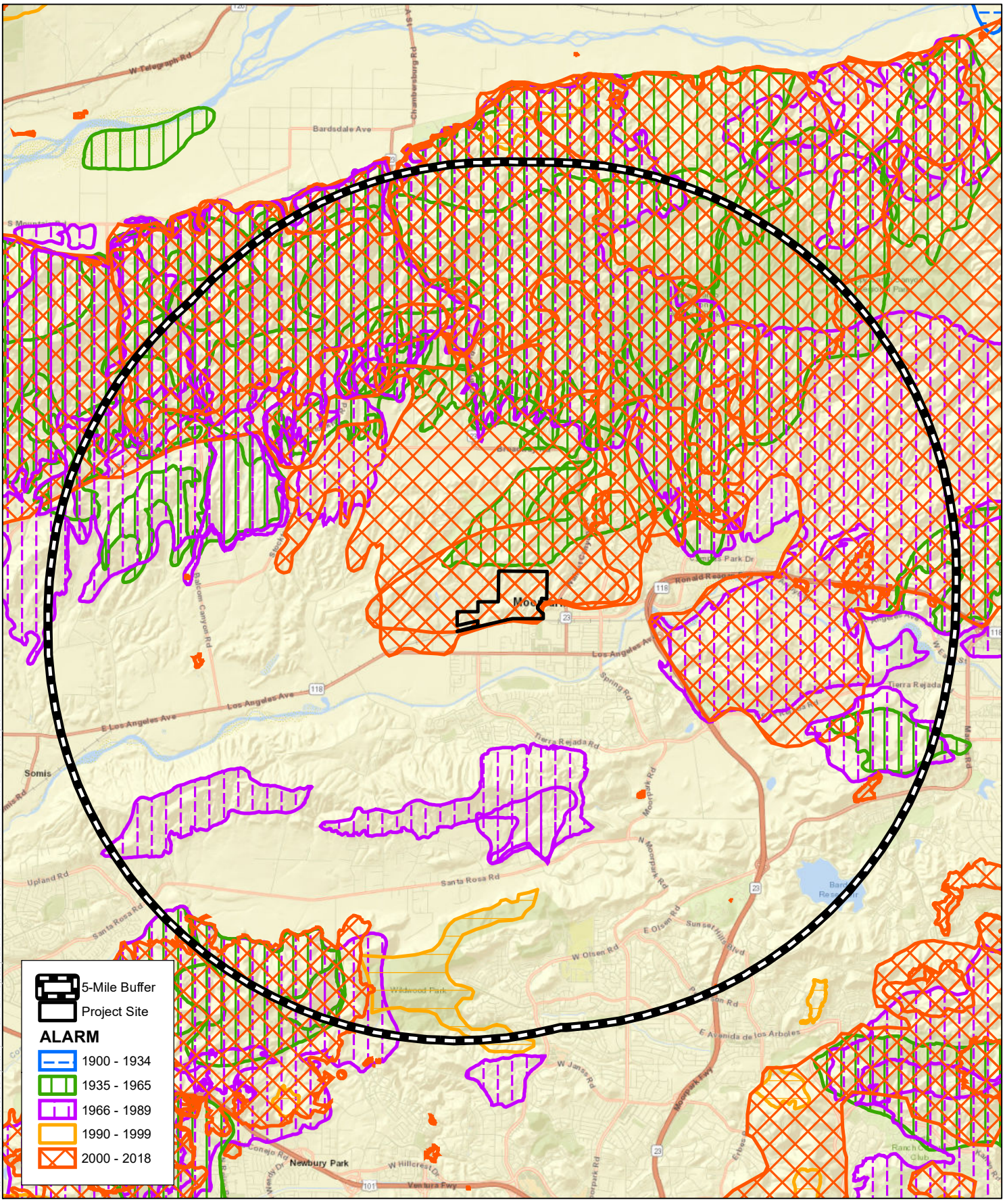
Appendix B

Fire History Map



SOURCE: BASEMAP-ESRI;FIRE-CALFIRE 2018

DUDEK

0 1 2 Miles

APPENDIX B

Fire History Map

Fire Protection Plan for the Hitch Ranch Project

Appendix C

BehavePlus Fire Behavior Analysis

APPENDIX C
Fire Behavior Modeling Summary
Hitch Ranch FPP, Moorpark, California

BEHAVEPLUS FIRE BEHAVIOR MODELING

Fire behavior modeling has been used by researchers for approximately 50+ years to predict how a fire will move through a given landscape (Linn 2003). The models have had varied complexities and applications throughout the years. One model has become the most widely used as the industry standard for predicting fire behavior on a given landscape. That model, known as "BEHAVE", was developed by the U. S. Government (USDA Forest Service, Rocky Mountain Research Station) and has been in use since 1984. Since that time, it has undergone continued research, improvements, and refinement. The current version, BehavePlus 6.0, includes the latest updates incorporating years of research and testing. Numerous studies have been completed testing the validity of the fire behavior models' ability to predict fire behavior given site specific inputs. One of the most successful ways the model has been improved has been through post-wildfire modeling (Brown 1972, Lawson 1972, Sneeuwjagt and Frandsen 1977, Andrews 1980, Brown 1982, Rothermel and Rinehart 1983, Bushey 1985, McAlpine and Xanthopoulos 1989, Grabner, et. al. 1994, Marsden-Smedley and Catchpole 1995, Grabner 1996, Alexander 1998, Grabner et al. 2001, Arca et al. 2005). In this type of study, Behave is used to model fire behavior based on pre-fire conditions in an area that recently burned. Real-world fire behavior, documented during the wildfire, can then be compared to the prediction results of Behave and refinements to the fuel models incorporated, retested, and so on.

Fire behavior modeling conducted on this site includes a relatively high-level of detail and analysis which results in reasonably accurate representations of how wildfire may move through available fuels on and adjacent the property. Fire behavior calculations are based on site-specific fuel characteristics supported by fire science research that analyzes heat transfer related to specific fire behavior. To objectively predict flame lengths, spread rates, and fireline intensities, this analysis incorporated predominant fuel characteristics, slope percentages, and representative fuel models observed on site. The BehavePlus fire behavior modeling system was used to analyze anticipated fire behavior within and adjacent to key areas just outside of the proposed lots.

Predicting wildland fire behavior is not an exact science. As such, the movement of a fire will likely never be fully predictable, especially considering the variations in weather and the limits of weather forecasting. Nevertheless, practiced and experienced judgment, coupled with a validated fire behavior modeling system, results in useful and accurate fire prevention planning information.

To be used effectively, the basic assumptions and limitations of BehavePlus must be understood.

- First, it must be realized that the fire model describes fire behavior only in the flaming front. The primary driving force in the predictive calculations is dead fuels less than one-quarter inch in diameter. These are the fine fuels that carry fire. Fuels greater than one inch have little effect while fuels greater than three inches have no effect on fire behavior.
- Second, the model bases calculations and descriptions on a wildfire spreading through surface fuels that are within six feet of the ground and contiguous to the ground. Surface fuels are often classified as grass, brush, litter, or slash.
- Third, the software assumes that weather and topography are uniform. However, because wildfires almost always burn under non-uniform conditions, length of projection period and choice of fuel model must be carefully considered to obtain useful predictions.
- Fourth, the BehavePlus fire behavior computer modeling system was not intended for determining sufficient fuel modification zone widths. However, it does provide the average length of the flames, which is a key element for determining "defensible space" distances for minimizing structure ignition.

Although BehavePlus has some limitations, it can still provide valuable fire behavior predictions which can be used as a tool in the decision-making process. In order to make reliable estimates of fire behavior, one must understand the relationship of fuels to the fire environment and be able to recognize the variations in these fuels. Natural fuels are made up of the various components of vegetation, both live and dead, that occur on a site. The type and quantity will depend upon the soil, climate, geographic features, and the fire history of the site. The major fuel groups of grass, shrub, trees, and slash are defined by their constituent types and quantities of litter and duff layers, dead woody material, grasses and forbs, shrubs, regeneration, and trees. Fire behavior can be predicted largely by analyzing the characteristics of these fuels. Fire behavior is affected by seven principal fuel characteristics: fuel loading, size and shape, compactness, horizontal continuity, vertical arrangement, moisture content, and chemical properties.

The seven fuel characteristics help define the 13 standard fire behavior fuel models[1] and the five custom fuel models developed for Southern California[2]. According to the model classifications, fuel models used in BehavePlus have been classified into four groups, based upon fuel loading (tons/acre), fuel height, and surface to volume ratio. Observation of the fuels in the field (on site) determines which fuel models should be applied in BehavePlus. The following describes the distribution of fuel models among general vegetation types for the standard 13 fuel models and the custom Southern California fuel models:

[1] Anderson, Hal E. 1982. Aids to Determining Fuel Models for Estimating Fire Behavior. USDA Forest Service Gen. Tech. Report INT-122. Intermountain Forest and Range Experiment Station, Ogden, UT.

[2] Weise, D.R. and J. Regelbrugge. 1997. Recent chaparral fuel modeling efforts. Prescribed Fire and Effects Research Unit, Riverside Fire Laboratory, Pacific Southwest Research Station. 5p.

- Grasses Fuel Models 1 through 3
- Brush Fuel Models 4 through 7, SCAL 14 through 18
- Timber Fuel Models 8 through 10
- Logging Slash Fuel Models 11 through 13

In addition, the aforementioned fuel characteristics were utilized in the recent development of 40 new fire behavior fuel models[3] developed for use in BehavePlus modeling efforts. These new models attempt to improve the accuracy of the standard 13 fuel models outside of severe fire season conditions, and to allow for the simulation of fuel treatment prescriptions. The following describes the distribution of fuel models among general vegetation types for the new 40 fuel models:

- Non-Burnable Models NB1, NB2, NB3, NB8, NB9
- Grass Models GR1 through GR9
- Grass-shrub Models GS1 through GS4
- Shrub Models SH1 through SH9
- Timber-understory Models TU1 through TU5
- Timber litter Models TL1 through TL9
- Slash blowdown Models SB1 through SB4

BehavePlus software was used in the development of this Hitch Ranch Project (Proposed Project) Fire Protection Plan (FPP) in order to evaluate potential fire behavior for the Project site. Existing site conditions were evaluated, and local weather data was incorporated into the BehavePlus modeling runs.

FUEL MODELS

Dudek utilized the BehavePlus software package to analyze fire behavior potential for the Hitch Ranch Project site in Moorpark, California. As is customary for this type of analysis, three fire scenarios were evaluated, including one summer, onshore weather condition (west from the Project Site) and two extreme fall, offshore weather condition (northt and northeast of the Project Site). Fuels and terrain at and beyond this distance can produce flying embers that may affect the project, but defenses have been built into the structures to prevent ember penetration and to extinguish fires that may result from ember penetration. It is the fuels adjacent to and within fuel modification zones that would have the potential to affect the project's structures from a radiant

[3] Scott, Joe H. and Robert E. Burgan. 2005. Standard fire behavior fuel models: a comprehensive set for use with Rothermel's surface fire spread model. Gen. Tech. Rep. RMRS-GTR-153. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 72 p.

and convective heat perspective as well as from direct flame impingement. BehavePlus software requires site-specific variables for surface fire spread analysis, including fuel type, fuel moisture, wind speed, and slope data. The output variables used in this analysis include flame length (feet), rate of spread (feet/minute), fireline intensity (BTU/feet/second), and spotting distance (miles). The following provides a description of the input variables used in processing the BehavePlus models for the Proposed Project site. In addition, data sources are cited and any assumptions made during the modeling process are described. Table 1 provides a description of the fuel model observed in the vicinity of the site that were subsequently used in the analysis for this project. Modeled areas include the high load grass ground fuels (Gr7) that occur throughout the Project site. A total of three fire modeling scenarios were completed for the Project site. These sites were selected based on the strong likelihood of fire approaching from these directions during a Santa Ana wind-driven fire event (fire scenarios 2 and 3) and an on-shore weather pattern (fire scenario 1).

Table 1. Existing Fuel Model Characteristics

Fuel Model	Description	Location	Fuel Bed Depth (Feet)
Gr7	High Load, Dry Climate Grass	Fuel type is concentrated throughout the Project site.	>5.0 ft.
Gr2	Low Load, Dry Climate Grass	Fuel type will occur post development within 50% thinning Zone 3.	1.0 ft.
Gr1	Sparse, Dry Climate Grass	Fuel type will occur post development within irrigated Zones 1 and 2	
FM8	Irrigated Landscape	Fuel type will occur post development within irrigated Zone 0.	<1.0 ft.

Topography

Slope is a measure of angle in degrees from horizontal and can be presented in units of degrees or percent. Slope is important in fire behavior analysis as it affects the exposure of fuel beds. Additionally, fire burning uphill spreads faster than those burning on flat terrain or downhill as uphill vegetation is pre-heated and dried in advance of the flaming front, resulting in faster ignition rates. Slope values ranging from 5–9% were measured around the perimeter of the proposed project site from U.S. Geological Survey (USGS) topographic maps.

Weather

Historical weather data for the Moorpark region was utilized in determining appropriate fire behavior modeling inputs for the Project area. 50th and 97th percentile moisture values were derived from Remote Automated Weather Station (RAWS) and utilized in the fire behavior

modeling efforts conducted in support of this report. Weather data sets from the Cheeseboro Station RAWS[4] were utilized in the fire modeling runs.

RAWS fuel moisture and wind speed data were processed utilizing the Fire Family Plus software package to determine atypical (97th percentile) and typical (50th percentile) weather conditions. Data from the RAWS was evaluated from August 1 through November 30 for each year between 1995 and 2018 (extent of available data record) for 97th percentile weather conditions and from June 1 through September 30 for each year between 1995 and 2018 for 50th percentile weather conditions.

Following analysis in Fire Family Plus, fuel moisture information was incorporated into the Initial Fuel Moisture file used as an input in BehavePlus. Wind speed data resulting from the Fire Family Plus analysis was also determined. Initial wind direction and wind speed values for the two BehavePlus runs were manually entered during the data input phase. The input wind speed and direction is roughly an average surface wind at 20 feet above the vegetation over the analysis area. Table 2 summarizes the wind and weather input variables used in the Fire BehavePlus modeling efforts.

Table 2. BehavePlus Fine Dead Fuel Moisture Calculation

Model Variable	Summer Weather (50th Percentile)	Peak Weather (97th Percentile)
Fuel Models	Gr7, Gr1, Gr2, and FM8	Gr7, Gr1, Gr2, and FM8
1 h fuel moisture	5%	1%
10 h fuel moisture	6%	2%
100 h fuel moisture	11%	4%
Live herbaceous moisture	60%	30%
Live woody moisture	90%	60%
20 ft. wind speed	24 mph (sustained winds)	19 mph (sustained winds); 50 and 70 mph (gusty winds)
Wind Directions from upslope (degrees)	60	180, 235
Wind adjustment factor	0.4	0.4
Slope (uphill)	5%	5 and 9%

Fire Behavior Modeling Effort

As mentioned, the BehavePlus fire behavior modeling software package was utilized in evaluating anticipated fire behavior adjacent to the Proposed Project site. Three focused analyses were completed, each assuming worst-case fire weather conditions for a fire approaching the project site from the north, northeast, and west. Four fire behavior variables were selected as

[4] https://wrcc.dri.edu/cgi-bin/rawMAIN.pl?caCCHB
Latitude: 34.1105 Longitude: -118.4302; Elevation: 1,650 ft.)

outputs from the BehavePlus analysis conducted for the project site, and include flame length (feet), rate of spread (mph), fireline intensity (BTU/feet/second), and surface fire spotting distance (miles). The aforementioned fire behavior variables are an important component in understanding fire risk and fire agency response capabilities. Flame length, the length of the flame of a spreading surface fire within the flaming front, is measured from midway in the active flaming combustion zone to the average tip of the flames (Andrews, Bevins, and Seli 2008). Fireline intensity is a measure of heat output from the flaming front, and also affects the potential for a surface fire to transition to a crown fire. Fire spread rate represents the speed at which the fire progresses through surface fuels and is another important variable in initial attack and fire suppression efforts (Rothermel and Rinehart 1983). Spotting distance is the distance a firebrand or ember can travel down wind and ignite receptive fuel beds. The information in Table 3 presents an interpretation of the outputs for two fire behavior variables as related to fire suppression efforts. The results of fire behavior modeling efforts are presented in Table 4. Identification of modeling run locations is presented graphically in Figure 4 of the FPP.

Table 3. Fire Suppression Interpretation

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

FIRE BEHAVIOR MODELING RESULTS

The results presented in Table 4 depict values based on inputs to the BehavePlus software and are not intended to capture changing fire behavior as it moves across a landscape. Changes in slope, weather, or pockets of different fuel types are not accounted for in this analysis. For planning purposes, the averaged worst-case fire behavior is the most useful information for conservative fuel modification design. Model results should be used as a basis for planning only, as actual fire behavior for a given location will be affected by many factors, including unique weather patterns, small-scale topographic variations, or changing vegetation patterns.

Based on the BehavePlus analysis, worst-case fire behavior is expected in non-maintained grass north and northeast of the proposed Project site under Peak weather conditions (represented by Fall Weather, Scenario 3). The fire is anticipated to be a wind-driven fire from the

north/northeast during the fall. Under such conditions, expected surface flame lengths reach 74 feet with wind speeds of 50+ mph. Under this scenario, fireline intensities reach 66,781 BTU/feet/second with fast spread rates of 20 mph and could have a spotting distance up to 3.5 miles away.

Based on the BeahvePlus analysis, post development fire behavior is expected in irrigated and replanted with plants that are acceptable with VCFD (Zone 0 - FM8) and (Zones 1 and 2 – Gr1), as well in an area with 50% thinning of the existing shrubs (Zone 3 - Gr2) under peak weather conditions (represented by Fall Weather, Scenario 3). Under such conditions, expected surface flame length is expected to be significantly lower, with flames lengths reaching approximately 18 feet with wind speeds of 50+ mph. Under this scenario, fireline intensities reach 3,037 BTU/feet/second with relatively slow spread rates of 2.1 mph and could have a spotting distance up to 1.3 miles away.

Table 4. BehavePlus Fire Behavior Modeling Results, Existing Conditions

Fire Scenario	Flame Length (feet)	Spread Rate (mph)[1]	Fireline Intensity (Btu/ft./s)	Spotting Distance[2] (Miles)
Scenario 1: 5% slope, Summer, Onshore, Summer Winds (Pre-Development)				
High Load Grass (Gr7)	29.1’	3.5	8,616	1.1
Scenario 2: 9% slope, Fall, Offshore Extreme Winds (Pre-Development)				
High Load Grass (Gr7)	42.9’ (74.6’ & 87.1’)	6.0 (20.0 & 28.0)	20,054 (66,781 & 93,536)	1.2 (3.5 and 4.9)[3]
Scenario 3: 5% slope, Fall, Offshore, Extreme Winds (Pre-Development)				
High Load Grass (Gr7)	43.0’ (74.6’ & 87.1’)	6.0 (20.0 & 28.0)	20,168 (66,846 & 93,591)	1.2 (3.5 & 4.9)

Note:

1 mph = miles per hour

2 Spotting distance from a wind driven surface fire.

3 It should be noted that the wind mph in parenthesis represent peak gusts of 50 mph and 70 mph, respectively.

Table 5. BehavePlus Fire Behavior Modeling Results, Post-Project Conditions

Fire Scenario	Flame Length (feet)	Spread Rate (mph)[1]	Fireline Intensity (Btu/ft./s)	Spotting Distance[2] (Miles)
Scenario 1: 5% slope, Summer, Onshore, Summer Winds (Post-Development)				
FMZ Zone 0 (FM8)	1.8'	0.1	20	0.2
FMZ Zones 1 and 2 (Gr1)	1.9'	0.2	24	0.2
FMZ Zone 3 (Gr2)	7.2'	1.1	420	0.4
Scenario 2: 9% slope, Fall, Offshore Extreme Winds (Post-Development)				
FMZ Zone 0 (FM8)	2.1' (3.0' & 3.0')	0.1 (0.2 & 0.2)	29 (63 & 63)	0.2 (0.4 & 0.5)
FMZ Zone 1 and 2 (Gr1)	4.0' (4.0' & 4.0')	0.7 (0.7 & 0.7)	115 (115 & 115)	0.2 (0.5 & 0.6)
FMZ Zone 3 (Gr2)	10.9' (18.0' & 18.0')	2.1 (6.2 & 6.2)	1,012 (3,037 & 3,037)	0.5 (1.3 & 1.6)
Scenario 3: 5% slope, Fall, Offshore, Extreme Winds (Post-Development)				
FMZ Zone 0 (FM8)	2.1' (3.0' & 3.0')	0.1 (0.2 & 0.2)	29 (63 & 63)	0.2 (0.4 & 0.5)
FMZ Zone 1 and 2 (Gr1)	4.0' (4.0' & 4.0')	0.7 (0.7 & 0.7)	115 (115 & 115)	0.2 (0.5 & 0.6)
FMZ Zone 3 (Gr2)	10.9' (18.0' & 18.0)	2.1 (6.2 & 6.2)	1,018 (3,037 & 3,037)	0.5 (1.3 & 1.5)

Note:

1 mph = miles per hour

2 Spotting distance from a wind driven surface fire.

3 It should be noted that the wind mph in parenthesis represent peak gusts of 50 mph and 70 mph, respectively.

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Appendix D

VCFD's Plant Reference Guide

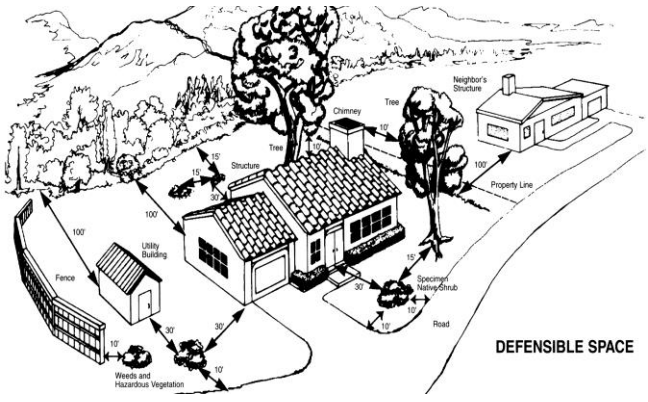
VENTURA COUNTY FIRE DEPARTMENT

FIRE HAZARD REDUCTION PROGRAM

PLANT REFERENCE GUIDE

Fire Hazard Reduction Unit

Fire Prevention Bureau



Updated April 2019

VENTURA COUNTY FIRE DEPARTMENT
FIRE HAZARD REDUCTION UNIT

FIRE PREVENTION BUREAU
165 Durley Ave.
Camarillo, ca 93010
805-389-9759 vcfd.org VCFHRP.org

This Plant Reference Guide is intended as a reference guide for commonly used native and ornamental plants. This is not an approved plant list. This guide will give the user certain characteristics of each plant listed. Plants and trees on the VCFD Prohibited Plant List shall not be installed within any new defensible space or fuel modification zone.

Defensible space and fuel modification zone provisions are intended to mitigate the risk to life and structures from intrusion of fire from wildland fire exposures, fire exposures from adjacent structures and to mitigate fires from spreading to wildland fuels that may threaten to destroy life, overwhelm fire suppression capabilities, or result in large property loss. Proper selection, installation, spacing and maintenance of plants and landscape is one of the key elements in the survivability of a structure during a wildfire.

Please see **VCFD Standard 515 – Defensible Space and Fuel Modification Zones** for Zone designations, plant and tree spacing, and maintenance requirements.

Fire-resistant does not mean fireproof! Even fire-resistant plants will burn if not well maintained. Keep your plants healthy with appropriate water, proper pruning and removal of dead material.

LEGEND

TYPE:	GC – Ground Cover SHRUB TREE	**WATER:**	VL – Very Low L – Low M – Medium H- High

SPACING: See VCFD Standard 515 -Defensible Space and Fuel Modification Zones

N: Native E/D: Evergreen/Deciduous

Ground Cover- Shrubs- Trees-

TARGET (Undesirable Plants) SPECIES ARE DESIGNATED WITH AN *. They are NOT ALLOWED within 30' of structures. Some may not be allowed within 50 -100' of structures - designated with (50 /100) after name. **It is highly recommended that these plants be removed from any existing defensible space zone.**

Plants highlighted in Green are known to be invasive species and have been known to degrade, change and/or displace native habitats.

Vines and climbing plants are not allowed on combustible structures and are therefore not included in the plant reference guide.

FIRE HAZARD REDUCTION PROGRAM

Plant Reference Guide

BOTANICAL NAME	COMMON NAME	TYPE	WATER	HEIGHT	SPREAD	N	E/D
Abelia grandiflora “Prostrata’	Prostrate Glossy Abelia	GC	M	1-2”	3-4”		E
Acacia redolens *	Desert Carpet Acacia*	GC	VL	18’	6’		E
Achillia tomentosa	Woolly Yarrow	GC	L	6-10”	6-12”		E
Ajuga reptans	Carpet Bulge	GC	H	4-6”	2-4”		E
Aptenia cordifolia	Red Apple Ice Plant	GC	M, L	-12”	Varies		E
Arctostaphylos “Pacific Mist” *(100)	NCN	GC	L	1-2’	5-6’		E
Arctostaphylos e. “Emerald Carpet” *(100)	Emerald Carpet Manzanita*	GC	L, VL	1’	4-6’		E
Arctostaphylos edmundsii *(100)	Little Sur Manzanita*	GC	L, VL	1-2’	4-6’		E
Arctostaphylos hookeri *(100)	Monterey Manzanita*	GC	L	1-2’	4-6’		E
Arctostaphylos uva-ursi *	Bearberry*	GC	L	6-12”	5-6’		E
Arctotheca calendula	Cape Weed	GC	M, L	-12”	-18”		E
Artemesia caucasica *(100)	Silver Spreader*	GC	L, VL	3-6”	2’		E
Artemesia californica ‘cultivars’ *(100)	Sagebrush – Prostrate forms*	GC	L, VL	Varies	Varies		E
Asarum caudatum	Wild Ginger	GC	M, H	7-10”	2’		D
Atriplex semibaccata *(100)	Creeping Saltbrush*	GC	L, VL	1’	1-5’	X	E
Baccharis p. ‘Pigeon Point’ *(100)	Dwarf Coyote Brush*	GC	L, VL	12-24”	6’		E
Baccharis p ‘Twin Peaks’ *(100)	Dwarf Coyote Brush*	GC	L, VL	12-24”	6’		E
Baccharis pilularis *(100)	Coyote Brush*	GC	L, VL			X	
C. s. ‘Repens’ *	Pro. Willowleaf Contoneater*	GC	M, L	-6”	6’		E
C. Salicifolius ‘Emerald Carpet’ *	Pro. Willowleaf Contoneater*	GC	M, L	12-15”	8’		E
Carpobrotus species	Sea Fig	GC	L	6-12”	24-30”		E
Ceanothus gloriosus *	Point Reyes Ceanothus*	GC	L	1-2’	4-5’	X	E
Ceanothus griseus varieties *	Prostrate carmel creaper*	GC	L	2-3’	8-10’	X	E
Ceanothus maritimus *	Maritime Ceanothus*	GC	L	1-3’	4-5’	X	E
Cerastium tomentosum	Snow-in-summer	GC	M, L	6-8”	2-3’		E
Chamaemelum nobile	Chamonile	GC	M	6-8”	-12”		E
Cistus ‘Sunset’	Rockrose	GC	L, VL	1-2’	6-8’		E
Cistus ‘Warley rose’	Rockrose	GC	L, VL	1’	4’		E
Cistus salviifolius	Sage leaf Rockrose	GC	L, VL	1-2’	6’		E
Coprosma kirkii *	No common name*	GC	M, L	2’	6-8’		E
Coreopsis auriculata ‘Nana’	No common name	GC	L, VL	5-8”	2’	X	E
Cotoneaster adpressus praecox *	Cotoneaster*	GC	M, L	-18”	6’		D
Dalea Greggii *	Trailing Indigo Bush*	GC	L, VL	12-18”	5-10”		E
Delosperma alba* (100)	White Trailing Ice Plant*	GC	L	-12”	2’		E
Dichondra micrantha	Dichondra	GC	H, M	-6”	2’		E
Drosanthemum hispidum	Ice Plant	GC	L	-12	1-2’		E
Duchesnea indica	Indian Mock Strawberry	GC	L	-8”	4’		E
Dymondia margaretae	No common name	GC	M, L	-3”	12-24”		E
Erigeron glaucus	Seaside Daisy	GC	M, L	10-12”	2’	X	E
Erigeron karvinskianus	Santa Barbara Daisy	GC	M, L	10-20”	3’		E
Euonymus fortunei ‘Colorata’	Purple-Leaf Winter Creeper	GC	M	1-2’	6’		E
Festuca cinerea (ovin glauca)	Blue Fescue	GC	M, L	-12”	2’		E
Festuca rubra	Red Fescue	GC	M, L	-16”	-30”		E
Fragaria chiloensis	Wild Strawberry	GC	L, VL	6-12”	-24”		E
Gazania rigens var Leucolaena	Trailing Gazania	GC	L	6-10”	-24”		E
Geranium incanum	Cranesbill	GC	M, L	-12”	12”		E

FIRE HAZARD REDUCTION PROGRAM

Plant Reference Guide

BOTANICAL NAME	COMMON NAME	TYPE	WATER	HEIGHT	SPREAD	N	E/D
Glechoma hederacea	Ground Ivy	GC	M	3-6”	-18”		E/D
Hedera helix & varieties *(100)	English Ivy*	GC	M, L	6-18”	4’		E
Heliaanthemum nummularium	Sunrose	GC	L	6-8”	3’		E
Herniaria glabra	Green Carpet	GC	M	2-3”	-16”		E
Hypericum calycinum	Aaron’s Beard	GC	M, L	6-12”	3’		E
Hypericum coris	No common name	GC	M, L	6-12”	2’		E
Iberis sempervirens	Evergreen Candytuft	GC	M	6-12”	6-12”		E
Iva hayesiana * (100)	Poverty Weed*	GC	L, VL	2-3’	4-5’	X	E
Juniperus confeerta* (100)	Shore Juniper*	GC	L	8-12”	4-5’		E
Lampranthus spectabilis* (100)	Trailing Ice Plant*	GC	L	-12”	12-24”		E
Laurentia fluviatilis	Blue Star Creeper	GC	M	2-4”	6-12”		E
Liriope spicata	Big Blue Lilly Turf	GC	M	18”	12”		E
Lonicera japonica* (100)	Japanese Honeysuckle*	GC	M	1-2’	6-10’		E
Lysimachia nummularia	Moneywort	GC	H, M	2-6”	2’		E
Mahonia aquifolium ‘Compacta’	Compact Oregon Grape	GC	M, L	1-2’	2-3’		E
Mahonia repens	Creeping Mahonia	GC	M, L	2-3’	2-3’	X	E
Myoporum ‘Pacificum’	Pacific Myoporum	GC	M, L	2-3’	2-3’		E
Myoporum parvifolium	NCN	GC	L	-3”	9’		E
Nandina domectica ‘Harbour Dwarf’	Dwarf Heavenly Bamboo	GC	M, L	1.5-2’	2-3’		E
Oenothera berlandieri	Mexican Evening Primrose	GC	L, VL	10-12”	4’		E
Oenothera stubbei	Baja Evening Primrose	GC	L, VL	-5”	2’		E
Ophiopogon japonicus	Mondo Grass	GC	M	8-12”	12-24”		E
Osteosperumum fruticosum	Trailing African Daisy	GC	M	-18”	4’		E
Pelargonium peltatum	Ivy Geranium	GC	M	2’	4’		E
Pelargonium tomentosum	Geranium	GC	M	-18”	2-4’		E
Phyla nodiflora (Lippia repens)	Lippia	GC	M, L	2-15”	3’		E/D
Polygonium capitatum	Pink Clover	GC	M, L	-18”	2’		E
Potentilla tabernaemontanii	Spring Cinquefoil	GC	M, L	2-6”	-12”		E
Ribes viburnifolium	Catalina Perfume	GC	L, VL	3’	3’	X	E
Rosmarinus officinalis ‘Huntington Blue’*	No common name*	GC	L	-18”	4’		E
Rosmarinus officinalis ‘Prostratus’*	Prostrate Rosemary*	GC	L	-24”	6’		E
Salvia sonomensis * (50)	Creeping Sage*	GC	L	8-12”	3-4’	X	E
Santolina chamaecyparissus	Lavender Cotton	GC	L	-24”	3’		E
Santolina rosmarinifolius (virens)	Green Lavender Cotton	GC	L	-24”	3’		E
Scaevola ‘Mauve Clusters’	No common name	GC	M, L	4-6”	3-4’		E
Sedum species	Stonecrops	GC	L, VL	Varies	Varies		E
Senecio mandraliscae	Blue Chalk Sticks	GC	M, L	-18”	5’		E
Senecio serpens	Blue Chalk Sticks	GC	M, L	-12”	3’		E
Soleirolia solerirolii	Baby;s Tears	GC	H, M	3-6”	-18”		E
Teucrium T. cossonii	Germander	GC	L	4-6”	2’		E
Teucrium chamaedrys ‘Prostratum’	Prostrate Gemander	GC	M, L	4-6”	3’		E
Thymus praecox arcticus	Mother of Thyme	GC	M, L	2-6”	-18”		E
Thymus pseudolanuginosus	Woolly Thyme	GC	M, L	2-3”	-12”		E
Trachelospermum jasminoides	Star Jasmine	GC	M, L	2’	4-5’		E
Trifolium fragiferum “o’conner’s” *	O’Connor’s Leegume*	GC	M, L	6-15”	6’		E
Verbena hybrida	Garden Verbena	GC	L, VL	6-12”	1.5-3’		E

FIRE HAZARD REDUCTION PROGRAM

Plant Reference Guide

BOTANICAL NAME	COMMON NAME	TYPE	WATER	HEIGHT	SPREAD	N	E/D
Verbena peruviana	No common name	GC	L, VL	-8”	2’		E
Verbena pulchella gracilior	Moss Verbena	GC	L, VL	12-15”	2-3’		E
Verbena tenuisecta	Moss Verbena	GC	L, VL	12-15”	2-3’		E
Vinca Major *(100)	Periwinkle	GC	M	12-24”	4-6’		E
Wedelia trilobata *	Wedelia*	GC	M, L	-12”	4-6’		E
Zauschneria californica *	California Fuchsia*	GC	L, VL	1-2’	3-5’	X	E
Zoysia tenuifolia	Korean Grass	GC	M, L	-6”	-18”		E

FIRE HAZARD REDUCTION PROGRAM

Plant Reference Guide

BOTANICAL NAME	COMMON NAME	TYPE	WATER	HEIGHT	SPREAD	N	E/D
Abutilon hybridum	Chinese Lantern	Shrub	M	10’	10’		E
Acanthus mollis	Bear’s Breech	Shrub	H, M	4’	4-6’		E/D
Achillea filipendulina *	Fernleaf Yarrow*	Shrub	L, VL	4-5’	2’		E
Achmea species	Bromeliaceae	Shrub	L	2’	2’		E
Adenostema fasciculatum * (100)	Chamise *	Shrub	L	5-12’	5-8’	X	E
Aeonium species	Crassulaceae	Shrub	M, L	3’	2’		E
Agapanthus species	Lily Of The Nile	Shrub	M	Varies	Varies		E/D
Agave species	Agave	Shrub	L, VL	Varies	Varies		E
Alocasia macrorrhiza	Elephant’s Ear	Shrub	H	5’	4’		E
Aloe species	Aloe	Shrub	L, VL	Varies	Varies		E
Alyogyne huegelii *	Blue Hibiscus *	Shrub	M, L	5-8’	8’		E
Anigozanthos flavidus	Kangaroo Paw	Shrub	M, L	3-5’	3’		E
Anigozanthos manglesii	No common name	Shrub	M, L	3’	3’		E
Arbutus unedo ‘Compacta’ *	Dwarf Strawberry Tree *	Shrub	M, L	6-8’	8’		E
Arbutus unedo ‘Elfin King’ *	Elfin King *	Shrub	M, L	3-5’	6’		E
Arbutus unedo ‘Octoberfest’ *	No common name *	Shrub	M, L	6-8’	8’		E
Arctostaphylos species *	Manzanita *	Shrub	L, VL	Varies	Varies	X	E
Artemisia ‘Powis Castle’ *	Powis Castle *	Shrub	L, VL	3’	6’		E
Artimisia californica * (100)	California Sagebrush *	Shrub	L	3-5’	3-5’	X	E
Artimisia stellerapa * (100)	Beach Worm Wood *	Shrub	L, VL	3’	3’		E
Aspidistra elatior	Cast Iron Plant	Shrub	M, L	-30”	3’		E
Asplenium bulbiferum	Mother Fern	Shrub	H, M	4’	4’		E
Aucuba japonica	Japanese Aucuba	Shrub	M, L	6’	6’		E
Baccharis p.ssp. Consanguinea * (100)	Coyote Brush *	Shrub	L, VL	Varies	Varies		E
Begonia species	Begonia	Shrub	H, M	Varies	Varies		E
Berberis thunbergii	Japanese Barberry	Shrub	M, L	4-6’	4-6’		D
Berberis thunbergii ‘cultivars’	Barberry	Shrub	M, L	Varies	Varies		D
Bergenia crassifolia	Winter Blooming Bergenia	Shrub	M, L	-20”	-20”		E
Bougainvillea species * (100)	Bougainvillea *	Shrub	L	10-25’	10-25’		
Buddleia davidii *	Butterfly Bush *	Shrub	M, L	10’	12’		E/D
Buxus microphylla japonica *	Japanese Boxwood *	Shrub	M, L	4-6’	4-6’		E
Buxux microphylla koreana Korean *	Korean Boxwood *	Shrub	M, L	4-6’	4-6’		E
Caesalpinia gilliesii *	Bird Of Paradise Bush *	Shrub	L, VL	10’	10’		E/D
Caesalpinia mexicana *	Mexican Bird Of Paradise *	Shrub	L, VL	10-12’	15’		E/D
Caesalpinia pulcherrima *	Red Bird Of Paradise *	Shrub	L, VL	10’	10’		E/D
Calliandra californica *	Baja Fairy Duster *	Shrub	L, VL	3’	4-5’	X	E/D
Calliandra eriophylla *	Fairy Duster *	Shrub	L, VL	3’	4-5’		E/D
Callistemon citrinus ‘Compacta’ *	Bottlebrush *	Shrub	L, VL	5’	5’		E
Calycanthus occidentalis *	Spice Bush *	Shrub	M, L	4-12’	5’		D
Carissa macrocarpa (grandiflora)	Natal Plum	Shrub	M, L	7’	7’		E
Carpenteria californica *	Bush Anemone *	Shrub	L	6-8’	6-8’	X	E
Cassia artemisiojdes *	Feathery Cassia *	Shrub	L, VL	3-6’	6’		E
Ceanothus species *	Wild Lilac *	Shrub	L, VL	Varies	Varies	X	E/D
Cercocarpus betuloides *	Mountain Mahogany *	Shrub	L, VL	5-12’	10’	X	E
Choisya ternate *	Mexican Orange *	Shrub	M	6-8’	8’		E
Cistus species	Rockrose	Shrub	L, VL	Varies	Varies	X	E

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Cleome spinosa *	Spider Flower *	Shrub	L, VL	4-6’	4-6’		E
Clivia miniata	Clivia	Shrub	H, M	2’	2’		E
Coleonema pulchrum	Pink Breath of Heaven	Shrub	M, L	5-10’	6’		E
Colocasia esculenta (caladium)	Elephant’s Ear	Shrub	H	6’	6’		E/D
Comarostaphylis diversifolia *	Summer Holly *	Shrub	L, VL	6-10’+	6-8’+		E
Convolvulus cneorum *	Bush Morning Glory *	Shrub	L	2-4’	2-4’		E
Coprosma pumila * (100)	No common name *	Shrub	M	3’	8’		E
Coprosma repens *(100)	Mirror Plant *	Shrub	M	10’	6’		E
Cortaderia selloana * (100)	Pampas Grass *	Shrub	L	10-12’	10-12’		E
Cotoneaster species *	Cotoneaster *	Shrub	M, L	2-18’	3-15’		E/D
Cotyledon species	No common name	Shrub	L	1-3’	1-3’		E
Crassula species	Jade Plant	Shrub	L	1-9’	1-9’		E
Cuphea hyssopifolia	False Heather	Shrub	H, M	1-2’	2’		E
Cycas revolute	Sago Palm	Shrub	M	2-10’	3-6’		E
Cyrtomium falcatum	Holly Fern	Shrub	H, M	2-3’	3-4’		E
Dasylirion longissima *	Mexican Grass Tree *	Shrub	L, VL	10’	8’		E
Dasylirion wheeleri *	Sotol *	Shrub	L, VL	6’	6’		E
Dendromecon harfordii *	Island Bush Poppy *	Shrub	L	20’	20’	X	E
Dietes bicolor	Fortnight Lily, African Iris	Shrub	M, L	2-3’	2-3’		E
Dodonaea viscose * (100)	Hopseed Bush *	Shrub	L	12-18’	10-12’		E
Echium fastuosum *	Pride of Madeira *	Shrub	L, VL	4-6’	4-6’		E
Elaeagnus pungens & cultivars *	Silverberry *	Shrub	M, L	6-15’	6-15’		E
Encelia californica *	Coast Sunflower *	Shrub	L, VL	3-5’	3-5’	X	E/D
Encelia farinose *	Brittle Bush *	Shrub	L, VL	3-5’	3-5’	X	E/D
Eriogonum fasciculatum *	Common Buckwheat *	Shrub	L	2-3’	2-3’	X	E
Eriogonum giganteum *	St. Catherine’s Lace *	Shrub	L, VL	8’	8’	X	E
Escallonia species	Escallonia	Shrub	M, L	2-15’	2-10’		E
Euonymus japonica & cultivars	Evergreen Euonymus	Shrub	M	2-10’	6’		E
Euphorbia species	Euphorbia	Shrub	L	Varies	Varies	X	
Euryops pectinatus	NCN	Shrub	L	6’	5’		E
Fatsia japonica	Japanese Aralia	Shrub	M	5-12’	6-10’		E
Fouquieria splendens *	Ocotillo *	Shrub	VL	8-25’	8-15’	X	E
Fremontodendron species & cultivars *(100)	Flannel Bush *	Shrub	L, VL	5-20’	15’	X	E
Gardenia jasminoides	Gardenia	Shrub	H	3-6’	3-5’		E
Garrya elliptica *	Coastal Silktassel *	Shrub	M, L	4-8’	4-8’	X	E
Grevillea ‘Noellii’	NCN	Shrub	M, L	4’	4-5’		E
Grewia caffra *	Lavender Star Flower *	Shrub	H, M	6-10’	6-10’		E
Hakea suaveolens *	Sweet Hakea *	Shrub	L	10-20’	15’		E
Hebe species & cultivars	Hebe	Shrub	M	3-6’	3-6’		E
Helictotrichon sempervirens *	Blue Oat Grass *	Shrub	L	2-3’	2-3’		E
Hemerocallis hybrids	Daylilly	Shrub	M, L	1-6’	2-6’		E/D
Hesperaloe parviflora	No common name	Shrub	VL	3-4’	4-6’		E
Heuchera	Coral Bella	Shrub	M	1-2’	1-2’	X	P
Hibiscus rosa – sinensis *	Chinese Hibiscus *	Shrub	M	15’	12’		E
Iiex species	Holly	Shrub	M, L	Varies	Varies		E
Iris douglasiana	Douglas Iris	Shrub	M, L	2’	2’		E

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Iris species	Bearded Iris	Shrub	M	-30”	2’		E
Isomeris arborea *	Bladderpod *	Shrub	L	3-10’	3-10’	X	E
Juniperus species *(100)	Juniper *	Shrub	L	Varies	Varies	X	E
Justicia brandegeana	Shrimp Plant	Shrub	M	3’	4’		E
Justicia californica *	Chuparosa *	Shrub	L, VL	2-5’	4’	X	D
Keckiella cordifolia	Heart-Leaved Penstemon	Shrub	L, VL	5-6’	8-10’	X	E/D
Kniphofia uvaria	Red-Hot Poker	Shrub	L	2-3’	3-4’		E
Larrea tridentate *(100)	Creosote Bush *	Shrub	VL	4-8’	4-8’	X	E
Lavandula angustifolia	English Lavender	Shrub	L	3-4’	3-4’		E
Lavandula dentate	French Lavender	Shrub	L	3’	3’		E
Lavandula Intermedia	Lavender	Shrub	L	1-2’	2-3’		E
Lavandula stoechas	Spanish Lavender	Shrub	L	2-3’	3’		E
Lavatera assurgentifloria *	California Tree Mallow	Shrub	L	8-12’	8-12’	X	E
Leonotis Ieonurus *	Lion’s Tail *	Shrub	L	3-6’	4-6’		E
Leucophyllum candidum *	Violet Silverleaf *	Shrub	L, VL	4-5’	4-5’		E
Leucophyllum frutescens *	Texas Ranger *	Shrub	L, VL	6-8’	6-8’		E
Leucophyllum laevigatum *(100)	Chihuahuan Sage *	Shrub	L, VL	3-4’	4-5’		E
Ligustrum japonicum	Privet	Shrub	H	10-12’	10-12’		E
Limonium perezii	Sea Lavender	Shrub	L	2’	2’		E
Liriope muscari	Big Blue Lily Turf	Shrub	M	1-2’	1-2’		E
Lobelia lanflora	Mexican Bush Lobelia	Shrub	L	2-3’	4-6’		E
Lupinus species	Lupine	Shrub	L, VL	Varies	Varies	X	E
Mahonia ‘Golden Abundance’ *(100)	No common name *	Shrub	M, L	5-6’	6’		E
Mahonia aquifolium *(100)	Oregon Grape *	Shrub	M, L	6-8’	6-8’	X	E
Mahonia fremontii *(100)	Desert Mahonia *	Shrub	L	3-12’	4-8’		E
Mahonia Iomarifolia *(100)	Venetian Blind Mahonia *	Shrub	M, L	6-10’	6-10’		E
Mahonia nevinii *(100)	Nevin Mahonia *	Shrub	L	3-10’	6-12’	X	E
Mahonia pinnata *(100)	California Holly Grape *	Shrub	M, L	4-5’	4-6’		E
Malosma laurina *(100)	Laurel Sumac *	Shrub	L	12-20’	12-20’	X	E
Malva species *	Mallow *	Shrub	L	Varies	Varies	X	E
Melaleuca nesophila *(100)	Pink Melaleuca *	Shrub	L	15-20’	15-20’		E
Mimulus species (Diplacus)	Monkey Flower	Shrub	L	1-4’	1-4’		E
Muhlenbergia rigins *	Dear Grass *	Shrub	L	5’	4’	X	
Myrica californica *	Pacific Wax Myrtle *	Shrub	L	10-15’	10-15’	X	E
Myrsine Africana	African Boxwood	Shrub	L	3-8’	3-8’		E
Myrtus communis ‘Compacta’ *	Dwarf Myrtle *	Shrub	M	5-8’	5-8’		E
Nandina domestica*(100)	Heavenly Bamboo*	Shrub	M	6-8’	4-5’		E
Nandina domestica ;Compacta’*(100)	No Common Name*	Shrub	M	4-5’	3-4’		E
Nephrolepis cordifolia	Southern Sword Fern	Shrub	M, L	2-3’	3-6’		E
Nerium oleander ‘Petite Salmon’	Petite Salmon	Shrub	L	3-4’	3-4’		E
Nerium species *(100)	Oleander *	Shrub	M, L	8-20’	10-20’		E
Opuntia species	Pricky Pear, cholla etc.	Shrub	L, VL	Varies	Varies	X	E
Pelargonium species	Geranium	Shrub	M, L	Varies	Varies		E
Pennisetum setaceum *(100)	Fountain Grass *	Shrub	L	-18”	1-2’		
Penstemon species	Beard Tongue	Shrub	L	Varies	Varies		E/D
Phlomis Fruticosa *(100)	Jerusalem Sage *	Shrub	M, L	3-4’	3-4’		E
Phoenix roebelenii	Pigmy Date Palm	Shrub	L	6’	6’		E

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Phormium tenax *	New Zealand Flax *	Shrub	M	5-9’	6’		E
Phormium tenax ‘cultivars’	No common name	Shrub	M	Varies	Varies		E
Photinia Fraseri *	Photinia *	Shrub	M, L	10-15’	10-20’		E
Pittosporum tobira	Tobira	Shrub	M, L	6-15’+	8-15’		E
Pittosporum tobira ‘Variegata’	No common name	Shrub	M	5-8’	6-8’		E
Pittosporum tobira ‘Wheeler’s Dwarf’	Dwarf Pittosporum	Shrub	M	1-3’	2-4’		E
Plumbago auriculata *(100)	Cape Plumbago *	Shrub	L	6-8’	8-12’		E
Polystichum munitum	Sword Fern	Shrub	M	2-4’	2-4’		E
Portulacaria afra	Elephant’s Food	Shrub	L	5-12’	6-12’		E
Punica granatum ‘Nana’	Dwarf Pomegranate	Shrub	L	3’	4’		D
Pyracantha species *	Firethorn *	Shrub	M	Varies	Varies		E/D
Rhamnus California *	Coffeeberry *	Shrub	M, L	3-15’	4-15’	X	E/D
Rhamnus crocea *	Redberry *	Shrub	M, L	2-3’	3’		E
Rhamnus crocea ilicifolia *	Hollyleaf Redberry *	Shrub	M, L	3-15’	3-15’		E
Rhaphiolepis indica	India Hawthorn	Shrub	M, L	4-8’	4-8’		E
Rhaphiolepis indica ‘Cultivars’	No common name	Shrub	M, L	Varies	Varies		E
Rhus integrifolia *(50)	Lemonade Berry *	Shrub	L	3-10’+	6-20’	X	E
Rhus ovata *	Sugar Bush *	Shrub	L	3-15’	6-15’	X	E
Ribes aureum *	Golden Currant *	Shrub	L	3-6’	3-6’		D
Ribes malvaceum *	Chaparral Currant *	Shrub	L	6-8’	5’	X	D
Ribes sanguineum & cultivars *	Red Flowering Currant *	Shrub	M, L	4-12’	4-8’		D
Ribes speciosum	Fuchsia-Flow.Gooseberry	Shrub	L	3-6’	3-6’	X	D
Ribes viburnifolium	Catalina Perfume	Shrub	L	3’	12’	X	E
Romneya coulteri *	Matilija Poppy *	Shrub	L	8’	4’	X	D
Rosa species	Rose	Shrub	M	Varies	Varies		E/D
Rosmarinus ‘Tuscan Blue’*	Tuscan Blue*	Shrub	L	6’	6’		
Salvia greggii *(100)	NCN*	Shrub	L	3-4’	3-4’		E
Salvia leucantha *(100)	Mexican Bush Sage *	Shrub	L	3-4’	3-4’		E
Salvia leucophylla *(100)	Purple Sage *	Shrub	L	2-6’	2-6’	X	E
Salvia species * (100) (White & Black)	Sage *	Shrub	L	Varies	Varies	X	E/D
Simmondsia chinensis *	Jojoba*	Shrub	L, VL	3-8’+	4-8’	X	E
Strelitzia reginae	Bird of Paradise	Shrub	M	5’	4’		E
Tecomaria capensis *(100)	Cape Honeysuckle *	Shrub	L	6-8’	12-15’		E
Tetrapanax papyriferus	Rice Paper Plant	Shrub	M	10-15’	15’		E
Tibouchina urvilleana *	Princess Flower *	Shrub	M	5-18’	5-18’		E
Trichostema lanatum	Wooly Blue Curls	Shrub	L, VL	3-5’	5’	X	E
Tulbaghia violacea	Society Garlic	Shrub	M	18’	2’		E/D
Viburnum species	Viburnum	Shrub	M	Varies	Varies		E/D
Westringia fruticosa *	Coast Rosemary *	Shrub	M, L	5-7’	6-12’	X	E
Woodwardia fimbriata	Giant Chain Fern	Shrub	L	9’	5’	X	E
Xylosma congestum *	Shiny Xylosma*	Shrub	M, L	15’+	15’+		E
Xylosma congestum ‘Compacta’ *	Compact Xylosma*	Shrub	M, L	8-12’	8-12’		E
Yucca species *	Yucca*	Shrub	L, VL	Varies	Varies		E
Zantedeschia aethiopica	Calla Lilly	Shrub	M	1-3’	3’		

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Acacia farnesiana *	Sweet Acacia *	Tree	L	15-20’	15-20’		D
Acacia greggii *	Catclaw Acacia *	Tree	L, VL	15-25’	15-25’		E
Acer macrophyllum *	Bigleaf Maple *	Tree	M	30-95’	30-95’	X	D
Acer negundo *	Box Elder *	Tree	M, L	60’	50’		D
Acer palmatum	Japanese Maple	Tree	M	20’	20’		D
Acer saccharinum *	Silver Maple *	Tree	M	40-100’	40-100’		D
Adenostema sparsifolium *(100)	Red Shanks *	Tree	L	12-15’	12-15’	X	E
Aesculus californica *	California Buckeye *	Tree	M, L	20’+	30’		D
Agathis robusta *	Queensland Kauri *	Tree	H	75’	25’		E
Agonis flexuosa *	Peppermint Tree *	Tree	M, L	25-35’	25-35’		E
Albizia julibrissin *	Silk Tree *	Tree	M	40’	40’		D
Alnus cordata *	Italian Alder *	Tree	M	40’	25’		D
Alnus rhombifloria	White Alder	Tree	H, M	50-90’	40’	X	D
Araucaria heterophylla *	Norfolk Island Pine *	Tree	H, M	100’	25’		E
Arbutus’Marina’	No common name	Tree	M, L	40’	40’		E
Arbutus unedo *	Strawberry Tree *	Tree	M, L	12-35’	20-35’		E
Archontophoenix cunninghamiana	King Palm	Tree	M	50’	10-15’		E
Bauhinia variegate *	Purple Orchid Tree *	Tree	M	20-35’	35’		E/D
Beaucarnea recuvata *	Bottle Palm *	Tree	L	25’	15’		E
Betula pendula	European White Birch	Tree	M	30-40’	30’		D
Brachychiton acerifolius *	Flame Tree *	Tree	L	60’	45-50’		D
Brachychiton populneus	Kurrajong Bottle Tree	Tree	L	30-50’	30’		E
Brahea armata *	Blue Hesper Palm *	Tree	L, VL	40’	10’		E
Brahea edulis *	Guadalupe Palm *	Tree	L, VL	30’	10’		E
Butia capitata *	Pindo Palm *	Tree	L	10-20’	15-20’		
Callistemon citrinus *	Lemon Bottlebrush *	Tree	M, L	25’	15’		E
Callistenom viminalis *	Weeping Bottlebrush *	Tree	M, L	20-30’	15’		E
Calocedrus decurrens *	Incense Cedar	Tree	L	40-80’	10-20’		E
Calodendrum capense *	Cape Chestnut *	Tree	M	30’	25-40’		D
Carya illinoensis *	River She-Oak *	Tree	M, L	70’	70’		D
Casuarina cunninghamiana *	River She-Oak *	Tree1	L	50-70’	20-30’		E
Catalpa speciosa *	Western Catalpa *	Tree	M	40-70’	40-70’		D
Cedrus Species *	Cedar *	Tree	L	Varies	Varies		E
Ceratonia siliqua *	Carob Tree *	Tree	L	30-40’	30-40’		E
Cercidium floridum *	Blue Palo Verde *	Tree	L, VL	30’	30’	X	D
Cercidium microphyllum *	Littleleaf Palo Verde *	Tree	L, VL	25’	25’	X	D
Cercis occidentalis	Western Redbud	Tree	M, L	20’	20’	X	D
Chamaerops humilis *	Mediterranean Fan Palm *	Tree	M	20’	20’		E
Chilopsis linearis *	Desert Willow *	Tree	L	35’	35’	X	D
Chionanthus retusus *	Chinese Fringe Tree *	Tree	M	20’	20’	X	D
Chitalpa tashkentensis *	Chitalpa *	Tree	M, L	20-30’	20-30’		D
Chorisia speciosa	Floss Silk Tree	Tree	M	30-60’	30-40’		D
Cinnamomum camphora *	Camphor Tree *	Tree	M, L	50’+	60’+		E
Citrus species	Citrus Trees	Tree	H, M	Varies	Varies		E

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Cocculus Laurifolius *	Laurel Leaf Snail Seed *	Tree	M	25’	30’+		E
Cordyline australis *	Giant Dracanea *	Tree	M	30’	15’		E
Cornus kousa *	Kousa Dogwood *	Tree	H	20’	15’		D
Cupaniopsis anacardioides	Carrot Wood	Tree	M	40’	40’		E
Cupressus sempervirens *	Italian Cypress	Tree	L	60’	10’		E
Cupressus species *	Cypress *	Tree	L	30-90’	30-40’		E
Cyathea cooperi	Australian Tree Fern	Tree	M, L	20’	6-12’		E
Discksonia Antarctica	Tasmanian Tree Fern	Tree	L	6-15’	6’		E
Dracaena draco *	Dragon Tree *	Tree	M, L	20’	20’		E
Eriobotrya deflexa	Bronze Loquat	Tree	M, L	20’	20’		E
Erythrina species	Coral Tree	Tree	M, L	Varies	Varies		D
Eucalyptus citriodora *	Lemon-Scented Gum *	Tree	M, L	75-100’	40’		E
Eucalyptus maculate *	Spotted Gum *	Tree	M, L	60-80’	40’		E
Eucalyptus nicholii *	Willow Peppermint *	Tree	M, L	40’	50’		E
Eucalyptus sideroxylon *	Red Ironbark *	Tree	M, L	35-80’	35’		E
Eucalyptus species *	Eucalyptus *	Tree	L	Varies	Varies		E/D
Eucalyptus torquata *	Coral Gum	Tree	M, L	25’	20’		E
Feijoa sellowiana	Pineaplle Guava	Tree	M, L	18-25’	25’		E
Ficus Species	Fig	Tree	M, L	Varies	Varies		E/D
Fraxinus augustifolia *	Raywood Ash *	Tree	M	25-35’	30’		D
Fraxinus dipetala	Foothill Ash	Tree	L, VL	18-20’	20-30’		D
Fraxinus velutina *	Arizona Ash *	Tree	M, L	20-50’	30-50’		D
Fraxinus velutina coriacea *	Montebello Ash *	Tree	M, L	20-40’	20-40’		D
Geijera parviflora	Australian Willow	Tree	M, L	25-30’	20-30’		E
Ginkgo biloba	Maidenhair Tree	Tree	M, L	35-80’	30-80’		D
Gleditsia triacanthos *	Honey Locust *	Tree	M, L	35-70’	30’		D
Grevillea robusta *	Silk Oak *	Tree	M	50-60’	30’		E/D
Heteromeles arbutifolia *	Toyon *	Tree	L, VL	15-30’	15-30’	X	E
Hymenosporum flavum	Sweetshade Tree	Tree	M, L	20-40’	15-20’		E
Jacaranda mimosifolia	Jacaranda	Tree	M, L	25-40’	30’		D
Juglans californica *	S, California Black Walnut *	Tree	L	20-35’	30-45’	X	D
Koelreuteria bipinnata *	Chinese Flame Tree *	Tree	M	20-40’	45’		D
Koelreuteria paniculata *	Golden Rain Tree *	Tree	M, L	20-35’	40’		D
Lagerstroemia indica	Crape Myrtle	Tree	M, L	30’	20’		D
Laurus nobilis *	Sweet Bay *	Tree	L	12-40’	15’		E
Leptospermum laevigatum *	Australian Tea Tree	Tree	L	15-25’	15-25’		E
Leptospermum scoparium	New Zealand Tea Tree	Tree	L	10-12’	8-10’		E
Liquidambar formosana *	Chinese Sweet Gum *	Tree	M	40-60’	25’		D
Liquidamber styraciflua	American Sweet Gum	Tree	M	60’	25’		D
Liriodendron tulipifera	Tulip Tree	Tree	M	60-80’	40’		D
Lithocarpus densiflorus *	Tanbark Oak *	Tree	L	60’	40’		E
Lyonothamnus floribundus *	Catalina Ironwood *	Tree	L	30-60’	20-40’	X	E
Magnolia soulangiana	Saucer Magnolia	Tree	M	25’	25’		D
Magnolia species *	Magnolia *	Tree	M	Varies	Varies		E/D

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BOTANICAL NAME	COMMON NAME	TYPE	WATER	HEIGHT	SPREAD	N	E/D
Maytenus boaria	Mayten Tree	Tree	M, L	30-50’	30’		E
Melaleuca leucadendra *(100)	Cajeput Tree *	Tree	L	20-40’	25’		E
Melia azedarach *	Chinaberry *	Tree	L	30’	30’		D
Metasequoia glyptostroboides *	Dawn Redwood *	Tree	H, M	80’	40’		D
Metrosideros exelsus *	New Zealand Christams *	Tree	L, VL	30’	30’		E
Morus Alba	White Mulberry	Tree	M, L	20-60’	30-50’		D
Musa species	Banana Palm	Tree	H	Varies	Varies		E
Olea euopea *	Olive	Tree	L, VL	35’	20-30’		E
Parkinsonia aculeate *	Jerusalem Thorn *	Tree	L, VL	15-30’	15-30’		D
Phoenix canariensis *	Canary Island Date Palm *	Tree	L	60’	50’		E
Phoenix dactylifera *	Date Palm	Tree	L	80’	15’		E
Pinus brutia *(100)	Calabrian Pine *	Tree	L	30-60’	30’		E
Pinus canariensis *(100)	Canary Island Pine *	Tree	L	40-100’	30’		E
Pinus coulteri *(100)	Coulter Pine *	Tree	L	30-60’	25-40’		E
Pinus eldarica *(100)	Afghan Pine *	Tree	L	30-60’	25-40’		E
Pinus halepensis *(100)	Aleppo Pine *	Tree	L	30-60’	25-40’		E
Pinus pinea *(100)	Italian Stone Pine *	Tree	L	40-80’	30-50’		E
Pinus radiate *(100)	Monterey Pine *	Tree	L	60-80’	20-35’	X	E
Pinus species *(100)	Pine Tree *	Tree	L	Varies	Varies		E
Pistacia chinensis *	Chinese Pistache	Tree	M, L	60’	50’		D
Pittosporum phillyraeoides *	Willow Pittosporum	Tree	L	15-25’	10-15’		E
Pittosporum rhombifolium *	Queensland Pittosporum	Tree	M	15-35’	25’		E
Pittosporum undulatum *	Victorian Box *	Tree	M	25’	25’		E
Platanus acerifolia	London Plane Tree	Tree	L	40-80’	30-40’		D
Platanus racemosa	California Sycamore	Tree	L	50-100’	50-100’	X	D
Podocarpus gracilior*(100)	Fern Pine*	Tree	M	60’	60’		E
Podocarpus macrophyllus *(100)	Yew Pine*	Tree	M	50’	45’		E
Populus fremontii *	Fremont Cottonwood *	Tree	M	40-60’	40-60’		D
Prosopis glandulosa	Honey Mesquite	Tree	L, VL	25-30’	25-30’		D
Prosopis juliflora	Mesquite	Tree	L, VL	40-50’	40-50’	X	D
Prunus ilicifolia *	Hollyleaf Cherry *	Tree	L, VL	15-30’	15-30’	X	E
Prunus lyonii *	Catalina Cherry *	Tree	L, VL	20-45’	30’+	X	E
Prunus species & cultivars	Cherry	Tree	Varies	Varies	Varies		E/D
Punica granatum	Pomegranate	Tree	L	12-18’	20’		D
Pyrus calleryana *	Callery Pear *	Tree	L	25-50’	25-50’		D
Pyrus kawakamii	Evergreen Pear	Tree	L	20-25’	20-25’		E
Quercus agrifolia*	Coast Live Oak*	Tree	L, VL	30-70’	70’+	X	E
Quercus chrysolepis*	Canyon Live Oak*	Tree	M, L	30-60’	20-60’	X	D
Quercus douglasii*	Blue Oak*	Tree	M	50’	50’	X	D
Quercus engelmanii*	Engelmann Oak*	Tree	L	60’	60’	X	E
Quercus ilex*	Holly Oak*	Tree	M	40-70’	40-70’		E
Quercus kellogii*	California Black Oak*	Tree	M	30-80’	60’	X	D
Quecus lobate*	Valley Oak*	Tree	L, VL	70’+	70’+	X	D
Quercus palustris*	Pin Oak*	Tree	H, M	50-80’	5-70’		D

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BOTANICAL NAME	COMMON NAME	TYPE	WATER	HEIGHT	SPREAD	N	E/D
Quercus rubra*	Red Oak*	Tree	H, M	90’	90’		D
Quercus suber*	Cork Oak*	Tree	M	70-100’	100’		E
Quercus virginiana*	Southern Live Oak*	Tree	M, H	60’	100’		E/D
Quercus wislizinii*	Interior Live Oak*	Tree	M, L	30-75’	75’+		E
Rhus Lancea*	African Sumac*	Tree	L	20-30’	20-30’		E
Robinia ambigua *	Locust *	Tree	M, L	30-50’	30’		D
Robinia pseudoacacia *	Black Locust *	Tree	L	75’	30-40’		D
Sambucus mexicana *	Mexican Elderberry *	Tree	L	10-50’	10-25’	X	D
Sapium sebiferum	Chinese Tallow Tree	Tree	M	35’	35’		D
Schefflera actinophylla	Queensland Umbrella Tree	Tree	H, M	20’+	20’+		E
Schefflera pueckleri	Tupidanthus	Tree	H, M	20’+	20’+		E
Schinus molle *	California Pepper	Tree	L	25-40’	25-40’		E
Schinus terebithifolius *	Brazillian Pepper *	Tree	L	30’	30’		E
Sequoia sempervirens *	Coast Redwood *	Tree	H, M	70-16’	40’+	X	E
Sophora japonica *	Japanese Pagoda Tree	Tree	M, L	40’	40’		D
Stenocarpus sinatus	Firewheel Tree	Tree	M, L	30’	15’		D
Strelitzia nicolai	Giant Bird of Paradise	Tree	L	30’	15’		E
Syagrus romanzoffianum*	Queen Palm*	Tree	M	60’	20’		E
Tabebuia chrysotriha	Golden Trumpet Tree	Tree	M	25-30’	30’		E
Tabebuia impetiginosa	Pink Trumpet Tree	Tree	M	35’	30’		E
Taxodium mucronatum *	Montezuma Cypress *	Tree	H, VL	75’	35’		E/D
Tipuana tipu	Tipu Tree	Tree	M	50’	50’		D
Trachycarpus fortunei *(100)	Windmill Palm *	Tree	M	30’	6’		E
Tristania conferta	Brisbane Box	Tree	L, VL	30-60’	40’		E
Tupidanthus calyptratus	Tupidanthus	Tree	M	20’	15’		E
Ulmus parvifolia *	Chinese Elm *	Tree	M, L	40-60’	50-70’		E
Umbellularia californica *	California Bay *	Tree	L, VL	30-75’	30-75’	X	E
Washingtonia filifera *(100)	California Fan Palm *	Tree	L	60’	15’	X	E
Washingtonia robusta *(100)	Mexican Fan Palm *	Tree	L	100’	15’		E
Zelkoza serrata *	Sawleaf Zelkova *	Tree	M	60’	60’		D
Ziziphus jujuba *	Chinese Jujube *	Tree	M, L	20-30’	20-30’		D

Note: The VCFD Suggested Plant Reference Guide may be updated, and the current version must be used when designing and submitting landscape/fuel modification plans.

Appendix E

VCFD Prohibited Plant List

VENTURA COUNTY FIRE PROTECTION DISTRICT
FIRE PREVENTION BUREAU
165 DURLEY AVENUE
CAMARILLO, CA 93010
www.vcfd.org
Office: 805-389-9738 Fax: 805-388-4356

410 – PROHIBITED PLANT LIST

This list was first published by the VCFD in 2014. It has been updated as of April 2019. It is intended to provide a list of plants and trees that are not allowed within a new required defensible space (DS) or fuel modification zone (FMZ). It is highly recommended that these plants and trees be thinned and or removed from existing DS and FMZs. In certain instances, the Fire Department may require the thinning and or removal.

This list was prepared by Hunt Research Corporation and Dudek & Associates, and reviewed by Scott Franklin Consulting Co, VCFD has added some plants and has removed plants only listed due to freezing hazard. Please see notes after the list of plants.

For questions regarding this list, please contact the Fire Hazard reduction Program (FHRP) Unit at 085-389-9759 or FHRP@ventura.org

Prohibited plant list:Botanical Name	Common Name	Comment*
Trees		
Abies species	Fir	F
Acacia species (numerous)	Acacia	F, I
Agonis juniperina	Juniper Myrtle	F
Araucaria species (A. heterophylla, A. araucana, A. bidwillii)	Araucaria (Norfolk Island Pine, Monkey Puzzle Tree, Bunya Bunya)	F
Callistemon species (C. citrinus, C. rosea, C. viminalis)	Bottlebrush (Lemon, Rose, Weeping)	F
Calocedrus decurrens	Incense Cedar	F
Casuarina cunninghamiana	River She-Oak	F
Cedrus species (C. atlantica, C. deodara)	Cedar (Atlas, Deodar)	F
Chamaecyparis species (numerous)	False Cypress	F
Cinnamomum camphora	Camphor	F
Cryptomeria japonica	Japanese Cryptomeria	F
Cupressocyparis leylandii	Leyland Cypress	F
Cupressus species (C. fobesii, C. glabra, C. sempervirens,)	Cypress (Tecate, Arizona, Italian, others)	F
Eucalyptus species (numerous)	Eucalyptus	F, I
Juniperus species (numerous)	Juniper	F
Larix species (L. decidua, L. occidentalis, L. kaempferi)	Larch (European, Japanese, Western)	F
Leptospermum species (L. laevigatum, L. petersonii)	Tea Tree (Australian, Tea)	F
Lithocarpus densiflorus	Tan Oak	F

Prohibited plant list:Botanical Name	Common Name	Comment*
Melaleuca species (M. linariifolia, M. nesophila, M. quinquenervia)	Melaleuca (Flaxleaf, Pink, Cajeput Tree)	F, I
Olea europea	Olive	I
Picea (numerous)	Spruce	F
Palm species (numerous)	Palm	F, I,
Pinus species (P. brutia, P. canariensis, P. b. eldarica, P. halepensis, P. pinea, P. radiata, numerous others)	Pine (Calabrian, Canary Island, Mondell, Aleppo, Italian Stone, Monterey)	F
Platycladus orientalis	Oriental arborvitae	F
Podocarpus species (P. gracilior, P. macrophyllus, P. latifolius)	Fern Pine (Fern, Yew, Podocarpus)	F
Pseudotsuga menziesii	Douglas Fir	F
Schinus species (S. molle, S. terebenthifolius)	Pepper (California and Brazilian)	F, I
Tamarix species (T. africana, T. aphylla, T. chinensis, T. parviflora)	Tamarix (Tamarisk, Athel Tree, Salt Cedar, Tamarisk)	F, I
Taxodium species (T. ascendens, T. distichum, T. mucronatum)	Cypress (Pond, Bald, Monarch, Montezuma)	F
Taxus species (T. baccata, T. brevifolia, T. cuspidata)	Yew (English, Western, Japanese)	F
Thuja species (T. occidentalis, T. plicata)	Arborvitae/Red Cedar	F
Tsuga species (T. heterophylla, T. mertensiana)	Hemlock (Western, Mountain)	F
Groundcovers, Shrubs & Vines		
Acacia species	Acacia (except dwarf/prostrate variety)	F
Adenostoma fasciculatum	Chamise	F
Adenostoma sparsifolium	Red Shanks	F
Agropyron repens	Quackgrass	F, I
Anthemis cotula	Mayweed	F, I
Arbutus menziesii	Madrone	F
Arctostaphylos species	Manzanita. Also note that Eastwood Manzanita grows to 8'	F
Arundo donax	Giant Reed	F, I
Artemisia species (A. abrotanium, A. absinthium, A. californica, A. caucasica, A. dracunculus, A. tridentata, A. pynocephala)	Sagebrush (Southernwood, Wormwood, California, Silver, True tarragon, Big, Sandhill)	F
*Atriplex species (numerous)***	Saltbush	F, I**
Avena fatua	Wild Oat	F
Baccharis pilularis	Coyote Bush	F
Bambusa species	Bamboo	F, I
Bougainvillea species	Bougainvillea	F, I, FR
Brassica species (B. campestris, B. nigra, B. rapa)	Mustard (Field, Black, Yellow) Wild Turnip	F, I

Prohibited plant list:Botanical Name	Common Name	Comment*
Bromus rubens	Foxtail, Red brome	F, I
Bromus carinatus	California brome	Grows to 5', Dies if cut
Castanopsis chrysophylla	Giant Chinquapin	F
Cardaria draba	Hoary Cress	I
Carpobrotus species	Ice Plant, Hottentot Fig	I
*Ceonothus griseus " Louis Edmunds***	Louis Edmunds Ceanothus	Grow higher than 18"*
*Ceonothus griseus var. horizontalis***	Carmel Creeper Ceonothus	Grows higher than 18"**
*Ceonothus griseus var. horizontalis "yankee point"**	Yankee Point Ceonothus	Grows higher than 18"**
*Ceonothus megacarpus***	Big pod ceonothus	Grows higher than 18"**
Cirsium vulgare	Wild Artichoke	F,I
Codariocalyx motorius	Telegraph Plant	F
Conyza bonariensis	Horseweed	F
Coprosma pumila	Prostrate Coprosma	F
Cortaderia selloana	Pampas Grass	F, I
Cytisus scoparius	Scotch Broom	F, I
Delosperma "alba"	White trailing Ice Plant	F
Dodonaea viscosa	Hopseed Bush	F
Drosanthemum Floribundum	Rosea Ice plant	F
Eriodictyon californicum	Yerba Santa	F
Eriogonum species (E. fasciculatum)	Buckwheat (California)	F
Fremontodendron species	Flannel Bush	F
Hedera species (H. canariensis, H. helix)	Ivy (Algerian, English)	I
Helix Canariensis	English Ivy	F
Heterotheca grandiflora	Telegraph Plant	F
Hordeum leporinum	Wild barley	F, I
Jasminum humile	Italian Jasmine	F
Juniperus species	Juniper	F
Lactuca serriola	Prickly Lettuce	I
Lamprathus aurantiacus	Bush Ice Plant	F
Lamprathus spectabilis	Trailing Ice Plant	F
Larix species (numerous)	Larch	F
Larrea tridentata	Creosote bush	F
Lepidium virginicum	Peppergrass	F
Leymus condensatus	Giant Wild Rye	Grows to 9' tall
Lolium multiflorum	Ryegrass	F, I
Lonicera japonica	Japanese Honeysuckle	F
Mahonia species	Mahonia	F
Miscanthus species	Eulalie Grass	F
Muhlenbergia species	Deer Grass	F

Prohibited plant list:Botanical Name	Common Name	Comment*
Nassella (stipa)leprida	Foothill needlegrass	Gets to 18" high. Cant cut to 4".
Nassella (stipa) pulchra	Purple needlegrass	Same comment as above
Nerium Oleander	Oleander	Toxic
Nicotiana species (N. bigelovii, N. glauca)	Tobacco (Indian, Tree)	F, I
Pennisetum setaceum	Fountain Grass	F, I
Perovskia atroplicifolia	Russian Sage	F
Phoradendron species	Mistletoe	F
Pickeringia montana	Chaparral Pea	F
Plumbago auriculate	Cape Plumbago	F
*Rhus (R. diversiloba, R. laurina, R. lentii)***	Sumac (Poison oak, Laurel, Pink Flowering)	F**. Poison oak presents a health hazard
Ricinus communis	Castor Bean	F, I
Rhus Lentii	Pink Flowering Sumac	F
Rosmarinus species	Rosemary (except dwarf/prostrate variety)	F
Salvia species (numerous)	Sage	F, I
Salsola australis	Russian Thistle	F, I
Senecio serpens	No common name	FR
Solanum Xantii	Purple Nightshade (toxic)	I, Toxic
Solanum Douglasii	Douglas Nightshade	Toxic
Silybum marianum	Milk Thistle	F, I
Tecoma capensis	Cape Honeysuckle	F
Thuja species	Arborvitae	F
Urtica urens	Burning Nettle	F
Vinca major	Periwnkle	I

*F = flammable, I = Invasive,

NOTES:

1. Plants on this list that are considered invasive are a partial list of commonly found plants. There are many other plants considered invasive that shall not be planted in a fuel modification zone and they can be found on The California Invasive Plant Council's Website www.cal-ipc.org/ip/inventory/index.php. Other plants not considered invasive at this time may be determined to be invasive after further study.
2. The absence of a particular plant, shrub, groundcover, or tree, from this list does not necessarily mean it is fire resistive.
3. Native, drought tolerant, plants are encouraged unless they are on this Prohibited Plant list or otherwise known as flammable or Invasive.
4. **: certain species of Ceonothus, Saltbush and Sumac need to be maintained free of dead materials, which builds up in the plant. Remove any poison oak (Sumac).
5. The VCFD Suggested Plant Reference Guide may be updated, and the current version must be used when designing and submitting landscape/fuel modification plans.