ADDENDUM 3.1
TO FINAL EIR NOS. 584 and 589

The Ranch Plan
Planning Areas 3 and 4
Master Area Plan
Subarea Plans 3.1 through 3.8 and 4.1
Infrastructure Improvements
(Cow Camp Road and "K" Street)
(PA140072 - 140081, ST140018, ST140019)

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February 25, 2015

Permits: PA140072 (PA3 & PA4 Addendum)

MASTER AREA PLANS FOR PLANNING AREAS 3 AND 4
(PA140072)

SUBAREA PLANS FOR SUBAREAS 3.1 THROUGH 3.8 AND 4.1
(PA140073 – 140081)

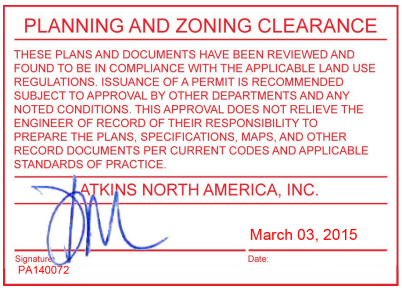
ASSOCIATED INFRASTRUCTURE IMPROVEMENTS
(ST140018 and ST140019)

Addendum 3.1 to Final Environmental Impact Report No. 584
(State Clearinghouse No. 2006061140)

Southern Subregion Natural Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan Joint Programmatic Environmental Impact Report

Addendum 3.1 to Final Environmental Impact Report No. 589
(State Clearinghouse No. 2003021141)

The Ranch Plan General Plan Amendment and Zone Change



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SECTION 1.0 PURPOSE OF ADDENDUM

1.1 OVERVIEW

The County of Orange was the California Environmental Quality Act (CEQA) lead agency for The *Ranch Plan Final Program Environmental Impact Report* (EIR) No. 589 (hereinafter referred to as "FEIR 589") and FEIR 584, which was the CEQA portion of the Joint Programmatic EIR/Environmental Impact Statement (EIS) prepared for the Southern Subregion Natural Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan (herein referred to as the "Southern Subregion HCP" or "SSHCP"). As discussed below, these two Program EIRs addressed the development of the Rancho Mission Viejo Planned Community. The focus of each of these documents is further discussed below.

Consistent with the requirements of the CEQA, both FEIR 584 and FEIR 589 were prepared as Program EIRs. Section 15165 of the CEQA Guidelines states, "Where individual projects are, or a phased project is, to be undertaken and where the total undertaking comprises a project with significant environmental effect, the Lead Agency shall prepare a single program EIR for the ultimate project as described in Section 15168. As such, these documents provide the comprehensive evaluation of the potential environmental impacts associated with the development of the Rancho Mission Viejo Planned Community, of which Planning Areas 3 and 4 and the associated infrastructure improvements (i.e., "Project") are a component. The Rancho Mission Viejo Planned Community was addressed as a single project. Past and future actions, including the approvals associated with implementation of Planning Areas 3 and 4, are the phased implementation of the larger Rancho Mission Viejo Planned Community.

Though identified as Program EIRs, as recommended by CEQA both FEIR 589 and FEIR 584 provided a substantial amount of detail on the uses and potential environmental impacts associated with the development of the Ranch Plan (hereinafter referred to as the "Rancho Mission Viejo Planned Community"). Both FEIR 589 and FEIR 584 went beyond a broad General Plan level of evaluation. They provided detailed information on the area of development, the amount and types of uses to be constructed; the sizing and location of infrastructure required to support the development (i.e., roads; drainage and water quality basins; electrical facilities; and water and wastewater storage and conveyance facilities). This allowed a comprehensive evaluation of the potential impacts and development of a mitigation program that identified conditions applicable to tract map approvals. The level of detail was of sufficient detail that regulatory permits have been issued for the Rancho Mission Viejo Planned Community by federal and State regulatory agencies (this is discussed further in Section 2.5).

When a Program EIR has been prepared, Section 15168 of the CEQA Guidelines provides the following direction for use of that document with later activities:

> Subsequent activities in the program must be examined in the light of the program EIR to determine whether an additional environmental document must be prepared.
>
> (1) If a later activity would have effects that were not examined in the program EIR, a new Initial Study would need to be prepared leading to either an EIR or a Negative Declaration.
>
> (2) If the agency finds that pursuant to Section 15162, no new effects could occur or no new mitigation measures would be required, the agency can approve the activity as being within the scope of the project covered by the program EIR, and no new environmental document would be required.

(3) An agency shall incorporate feasible mitigation measures and alternatives developed in the program EIR into subsequent actions in the program.

(4) Where the subsequent activities involve site specific operations, the agency should use a written checklist or similar device to document the evaluation of the site and the activity to determine whether the environmental effects of the operation were covered in the program EIR.

(5) A program EIR will be most helpful in dealing with subsequent activities if it deals with the effects of the program as specifically and comprehensively as possible. With a good and detailed analysis of the program, many subsequent activities could be found to be within the scope of the project described in the program EIR, and no further environmental documents would be required.

In keeping with this direction, the County of Orange has evaluated the Project (development of Planning Areas 3 and 4 and the associated infrastructure improvements) to determine what level of environmental document is required. Though the impacts of the Project are consistent with those identified in FEIR 589 and FEIR 584, the County of Orange has required the preparation of an Addendum as a method of documenting the consistency with the certified documents and to modify the Statistical Table associated with the Rancho Mission Viejo Planned Community.

1.2 USE OF AN ADDENDUM

This Addendum has been prepared in accordance with the provisions of the CEQA (Sections 21000, et seq. of the *California Public Resources Code*) and the State CEQA Guidelines (Title 14 *California Code of Regulations* Sections 15000, et seq.). Section 15164(a) of the State CEQA Guidelines states that "the lead agency or a responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred". Pursuant to Section 15162(a) of the State CEQA Guidelines, a subsequent Environmental Impact Report (EIR) or Negative Declaration is only required when:

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

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

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

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

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

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

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

FEIR 589 was certified by the Orange County Board of Supervisors on November 8, 2004, as adequately addressing the potential environmental impacts associated with the development of the "Ranch Plan", a 22,815-acre Planned Community allowing for the development of 14,000 dwelling units and 5,200,000 square feet of employment uses. Subsequent to the approvals, the name was changed from the Ranch Plan to the Rancho Mission Viejo Planned Community. Thus, the overall development is alternatively referred to as "the Rancho Mission Viejo Planned Community"; however, there are references to planning document that still use the name "the Ranch Plan".

Following the preparation of FEIR 589, the SSHCP and its associated Joint Programmatic EIR/EIS was prepared by the County of Orange in cooperation with the California Department of Fish and Game (CDFG)[1] and the U.S. Fish and Wildlife Service (USFWS) in accordance with the provisions of the State Natural Community Conservation Planning Act of 1991 (NCCP Act), the California Endangered Species Act (CESA), the Federal Endangered Species Act (FESA), Section 1600 et seq. of the *California Fish and Game Code,* CEQA, and the National Environmental Policy Act (NEPA).[2] The SSHCP provides for the conservation of designated State- and federally listed and unlisted species and associated habitats that are currently found within the 132,000-acre Natural Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan (NCCP/MSAA/HCP) study area. The County of Orange Board of Supervisors certified the EIR, hereinafter referred to as "FEIR 584", on October 24, 2006.

The purpose of this Addendum is to analyze the potential differences between the impacts evaluated in FEIR 589 and FEIR 584 and those that would be associated with the development of Planning Areas 3 and 4 (i.e., the "Project"). The scope of the Planning Areas 3 and 4 Project is a subset of the larger Rancho Mission Viejo Planned Community addressed in FEIR 589 and was included as part of the RMV Property evaluated in FEIR 584 in the context of the SSHCP. This Addendum is to both FEIR 584 and FEIR 589 because both documents are relevant to the evaluation of the impacts associated with the Rancho Mission Viejo Planned Community. As further discussed in Section 2.5, the Rancho Mission Viejo Planned Community project was developed in coordination with the NCCP/MSAA/HCP to ensure that the Rancho Mission Viejo Planned Community project was substantially consistent with the draft planning guidelines and principles formulated to address biological in the larger subregion.

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1 Although the California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW) effective January 1, 2013, "CDFG" is still used throughout this document for all documents published, actions taken, or database searches completed before January 1, 2013.

2 The environmental document for the Southern Subregion NCCP/MSAA/HCP was prepared pursuant to both CEQA and NEPA. NEPA was required because the approval of the SSHCP and issuance of the Incidental Take Permit (ITP) was a federal action taken by the USFWS. Though the Minor Amendment to the SSHCP will be a federal action, this Addendum is being prepared to satisfy the requirements of CEQA only. Therefore, the discussion in this Addendum references FEIR 584 (the CEQA component of the joint environmental document prepared for the Southern Subregion NCCP/MSAA/HCP because certification of FEIR 584 is the action taken by the Orange County Board of Supervisors.

The County of Orange certified FEIR 589 for the General Plan Amendment and zone change, which entitled the Rancho Mission Viejo Planned Community. FEIR 584 (as the CEQA portion of the Joint Programmatic EIR/EIS for the SSHCP) is the evaluation used for the establishment of the SSHCP and the is the basis for the ITP issued by the U.S. Fish and Wildlife Service for the RMV Property (this is discussed in more detail in Section 2.3.1 of this Addendum). The analysis of consistency with the findings in FEIR 584 is only used in the context of biological resources and the basis for determining consistency of the Planning Areas 3 and 4 Project with the SSHCP (e.g., if it would result in a "loss of habitat reserve acres" or a "loss of habitat value"). As discussed in Section 3.0 of this Addendum, the Project includes the Master Area Plan, Subarea Plans, tentative tract maps, grading, and associated infrastructure improvements.

It is appropriate to have this Addendum be to both FEIR 589 and FEIR 584 because both of these documents address the implementation of the Rancho Mission Viejo Planned Community. FEIR 589 addressed the County entitlements for the Rancho Mission Viejo Planned Community and became the basis for the County's General Plan and zoning. The SSHCP, and the associated FEIR 584, is recognized as the planning program adopted by both the County and USFWS for the protection of biological resources for southeast Orange County. The analysis in FEIR 584 and FEIR 589 is consistent; however, since FEIR 584 was certified after the Settlement Agreement on FEIR 589 was reached (this is discussed further in Section 2.3), FEIR 584 addressed the development concept accepted by the Settlement Agreement. As the CEQA lead agency for both documents, it is beneficial for the County of Orange to have the Addendum reference both documents to ensure a complete and updated record of all actions is maintained.

The application conforms to the intent of the approved Rancho Mission Viejo Planned Community. As described in detail herein, there are no new significant impacts resulting from these changes, nor would there be any substantial increase in the severity of any previously identified environmental impacts. The potential impacts associated with these proposed changes would either be the same or less than the anticipated levels described in the approved FEIR 589 and FEIR 584. In addition, there are no substantial changes to the circumstances under which Planning Areas 3 and 4 would be undertaken. Therefore, in accordance with Section 15164 of the State CEQA Guidelines, this Addendum to the previously approved FEIR 589 and FEIR 584 serve as the appropriate environmental documentation for construction-level approvals associated with development in Planning Areas 3 and 4. In taking action on any of the approvals outlined in Section 3.0, Project Description, the decision-making body must consider the whole of the data presented in FEIR 589, FEIR 584, and this Addendum. The FEIRs include the Findings of Fact and Statement of Overriding Considerations and Mitigation Monitoring and Reporting Program (MMRP), which is contained in the Regulation Compliance Matrix [RCM].[3]

Section 2.0 of this Addendum provides background on and a chronology of the Rancho Mission Viejo Planned Community; actions taken subsequent to the approval by the Board of Supervisors; related planning programs; and other projects in the vicinity of the Project site.

Section 3.0 provides a description of the proposed actions associated with Planning Areas 3 and 4, as well as the location of the Rancho Mission Viejo Planned Community, the Project site, and actions being addressed as part of this Addendum to FEIR 584 and FEIR 589.

[3] In conjunction with the approval of the Rancho Mission Viejo Planned Community project, the County Board of Supervisors adopted a Mitigation Monitoring and Reporting Program (MMRP) pursuant to Section 21081.6 of the *California Public Resources Code*. Over time, other compliance measures that apply to the project that also serve to reduce environmental impacts have been included. These include provisions from the Development Agreement; the Planned Community Zoning Regulations/Conditions; the South County Roadway Improvement Program (SCRIP); Litigation Settlement Agreement requirements; and Service Provider Agreement requirements. Combined, these requirements are tracked in a comprehensive Regulation Compliance Matrix.

Section 4.0 presents an environmental analysis of the proposed Planning Areas 3 and 4 Project. The County of Orange's current Environmental Checklist questions have been used as the basis for the analysis in this Addendum. It should be noted that the Environmental Checklist has been updated since FEIR 584 and FEIR 589 were certified.

Appendix A, the Planning Areas 3 and 4 RCM, identifies the project design features, standard conditions of approval, mitigation measures, stipulations from past settlement agreements, and permit requirements that are applicable to Planning Areas 3 and 4. As previously noted, the Project represents a portion of the much larger, previously approved, Rancho Mission Viejo Planned Community. Therefore, only those mitigation requirements from the previously approved document that are applicable to Planning Areas 3 and 4 have been included in this analysis.

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Permits: PA140072 (PA3 & PA4 Addendum)

SECTION 2.0 PROJECT BACKGROUND

2.1 INTRODUCTION AND PROJECT HISTORY

The following provides a summary of actions associated with the development, approval, and implementation of the Rancho Mission Viejo Planned Community. The summary is generally provided in chronological order of actions. Table 1 provides a tabular chronology of the environmental documents which have been prepared related to the Rancho Mission Viejo Planned Community.

TABLE 1
RANCH PLAN ENVIRONMENTAL DOCUMENTATION

Document	Lead Agency	Date	Action
Ranch Plan Program FEIR 589	County of Orange	November 8, 2004	Certification of FEIR 589 Project approval
Addendum No. 1 to FEIR 589 (for Planning Area 1)	County of Orange	July 26, 2006	Approval of Addendum Project approval
Southern Subregion Natural Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan (NCCP/MSAA/HCP) EIR/EIS			
FEIR 584	County of Orange	October 24, 2006	Certification of FEIR 584 Project approval
Final EIS	USFWS	January 10, 2007	Approval of Final EIS Approval of the Southern HCP and issuance of FESA Section 10(a)(1)(B) Incidental Take Permits
FEIR	CDFG	January 26, 2007	Approval of Streambed Alteration Agreement
FEIR	CDFG	September 29, 2008	Approval of the MSAA
San Juan Creek and Western San Mateo Creek Watershed Special Area Management Plan (SAMP) EIS	USACE	March 2007	Approval of EIS Approval of project and issuance of long-term 404 permit
Addendum to FEIR 584 and FEIR 589 (Cow Camp Road and Ancillary Infrastructure Improvements)	County of Orange	November 18, 2008	Approval of Addendum Approval of Project
Addendum No. 1.1 to Final EIR 589 (Modification to Planning Area 1)	County of Orange	February 24, 2011	Approval of Addendum Project approval
Addendum to Final EIR 584 (Planning Area 2: Zone 1/Zone A Reservoir Project)	Santa Margarita Water District	July 27, 2011	Approval of Addendum Approval of Project
Addendum to Final EIR 584 (Cañada Gobernadora Multipurpose Basin Project)	Santa Margarita Water District	December 3, 2012	Approval of Addendum

TABLE 1
RANCH PLAN ENVIRONMENTAL DOCUMENTATION

Document	Lead Agency	Date	Action
Addendum to Final EIR 589 (Master Area Plan and Subarea Plans for Planning Area 2)	County of Orange	March 27, 2013	Approval of Addendum Project approval
Addendum to Final EIR 584 Planning Area 2: Zone 2/Zone B Reservoir Project	Santa Margarita Water District	Anticipated January 2015	Approval of Addendum Approval of Project
Addendum to FEIR 584 and FEIR 589 ("F" Street)	County of Orange	Anticipated early 2015	Approval of Addendum Approval of Project

2.2 THE RANCH PLAN AND PROGRAM FINAL EIR 589

The Rancho Mission Viejo Planned Community project was developed in coordination with the Natural Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan (NCCP/MSAA/HCP) and the Special Area Management Plan (SAMP) planning programs to ensure that the Rancho Mission Viejo Planned Community project was substantially consistent with the draft planning guidelines and principles formulated to address biological and water resources in the larger subregion. In addition, a third process, the South County Outreach and Review Effort (SCORE), was developed by the County of Orange to seek input from the community on the project.

As part of the CEQA process, the County of Orange prepared and circulated a Notice of Preparation (NOP)/Initial Study (IS) for *The Ranch Plan Program EIR 589* on February 24, 2003. The County received 52 comment letters. A revised NOP outlining minor changes in the project was sent on March 23, 2004, to the recipients of the original NOP and others who commented on the NOP and/or wished to be added to the notification list. The County of Orange Planning Commission held a public scoping meeting on the project and its associated Program EIR on April 23, 2003, at the City of Mission Viejo City Council chambers.

The County of Orange released Draft Program EIR 589 (Draft EIR 589) for public review and comment on June 10, 2004, for a 61-day public review period. Copies of the Draft EIR were made available in the following branch libraries in south Orange County: Laguna Niguel, Rancho Santa Margarita, San Clemente, San Juan Capistrano Regional, Mission Viejo, and Ladera Ranch. The County received 193 written comments (letters and emails) during the public review period on Draft EIR 589. All these comments were responded to in writing and are part of FEIR 589. In addition, five public meetings were held before the Orange County Planning Commission.

On November 8, 2004, the Orange County Board of Supervisors approved a General Plan Amendment (Resolution No. 04-291), Zone Change (Resolution No. 04-292 and Ordinance No. 04-014), and Development Agreement (Resolution No. 04-293 and Ordinance No. 04-015) for the 22,815-acre Rancho Mission Viejo Planned Community project. The Board of Supervisors selected Alternative B-10 Modified, which established a blueprint for the long-term conservation, management, and development of the last large-scale, integrated landholding in south Orange County. This alternative allowed for the construction of 14,000 dwelling units, 3,480,000 square feet of Urban Activity Center (UAC) uses on 251 acres, 500,000 square feet of Neighborhood Center uses on 50 acres, and 1,220,000 square feet of business park uses on 80 acres, all of which were proposed to occur on approximately 7,683 acres of the Rancho Mission Viejo Planned Community. The balance of the Rancho Mission Viejo Planned Community, totaling

approximately 15,132 gross acres (or approximately 66.32 percent), was identified for open space uses.

Concurrent with the foregoing approvals, the Board of Supervisors adopted Resolution No. 04-290, certifying FEIR 589 as complete, adequate, and in full compliance with the requirements of CEQA and the State CEQA Guidelines. A Findings of Fact and a Statement of Overriding Considerations were adopted as part of the approval process. The Findings of Fact for unavoidable adverse impacts were made for the following topical areas: land use and relevant planning, agricultural resources, water resources, air quality, noise, aesthetics and visual resources, mineral resources, fire protection services and facilities, traffic and circulation, and biological resources.

2.3 SETTLEMENT AGREEMENTS

On December 8, 2004, the City of Mission Viejo (City) and a coalition of concerned environmental groups (Resource Organizations) filed separate actions in the Orange County Superior Court challenging the Board of Supervisors' approval of the Rancho Mission Viejo Planned Community project and its certification of FEIR 589 (Orange County Superior Court Case Nos. 04CC11999 and 04CC01637). In summary, the individual actions raised questions concerning (1) potential local and regional transportation impacts associated with implementation of the Rancho Mission Viejo Planned Community project and (2) the appropriate/desired scope of biological resource protection to be implemented within the boundaries of the Rancho Mission Viejo Planned Community. Following a series of meetings and negotiations between representatives of the County, the City, the applicant, and the Resource Organizations, the parties achieved full settlement of the outstanding issues on June 9, 2005 (City) and August 16, 2005 (Resource Organizations), with dismissal of the individual lawsuits following thereafter.

The terms of the individual settlements were memorialized in separate settlement agreements executed by and among the parties on the identified dates. Notably, the provisions of the August 16, 2005, settlement agreement (Resource Organizations) resulted in certain refinements to the Rancho Mission Viejo Planned Community project that, in effect, increased the amount of open space that will be permanently protected and managed (i.e., from approximately 15,132 gross acres to 16,942 gross acres) and reduced the acreage available for development activities (i.e., from approximately 7,683 acres to 5,873 acres). The refinements focused on further protection of resources by concentrating development in the areas with lower biological resource values while continuing to protect high resource values, including the vast majority of the western portion of the San Mateo Creek Watershed within the Rancho Mission Viejo Planned Community.

The Rancho Mission Viejo Planned Community project was further and subsequently influenced by input received from the general public, the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the USFWS. The refinements resulted in what is referred to as "Alternative B-12", a plan that is consistent with the settlement agreements. Alternative B-12 will retain 16,942 gross acres of the Rancho Mission Viejo Planned Community in protected open space and will allow for development activities on 5,873 acres. At the same time, Alternative B-12 provides the same level of housing and nonresidential development as previously approved for the B-10 Modified Alternative. It should be noted that, for the B-12 Alternative, an overstated impact analysis is assumed for development in Planning Areas 4 and 8 and for the orchards in Planning Areas 6 and 7. The impact analysis is considered "overstated" as the final footprint of future development/orchards within these planning areas was undefined at that time because the precise location of future development/orchards was not known. As such, possible impacts in Planning Area 4 are assumed to affect a larger "impact area" of approximately 1,127 acres and the impacts for Planning Area 8 are assumed to affect a larger "impact area" of approximately 1,349 acres. The impact areas in Planning Areas 6 and 7 were approximately 249

acres and 182 acres, respectively. Therefore, the total impact area for Alternative B-12 was approximately 7,788 acres. It should be emphasized that this impact analysis overstates possible impacts because ultimately, the Rancho Mission Viejo Planned Community project development in the areas of overstated impacts is limited to 550 acres of development and 175 acres of reservoir uses in Planning Area 4, 1,500 acres of development in Planning Area 8, and a total of 50 acres of orchards in Planning Areas 6 and/or 7. Since the approval of the settlement agreements, the 50 acres of orchards have been planted in Planning Area 7. The configuration of the 500 acres of development in Planning Area 8 is required to take into consideration the findings of five years of arroyo toad telemetry studies in conjunction with minimizing impacts, as required by the USACE Special Conditions.

All subsequent discussion of the "Ranch Plan" or the Rancho Mission Viejo Planned Community in this Addendum refers to Alternative B-12 outlined in the settlement agreements, unless otherwise noted.

2.4 CITY OF SAN JUAN CAPISTRANO ANNEXATION

In 2009, the City of San Juan Capistrano purchased 132 acres of the Rancho Mission Viejo Planned Community, of which 105 acres were within the boundaries of Planning Area 1. The property was annexed into the City for use as recreational open space (i.e., the Rancho Mission Viejo Riding Park at San Juan Capistrano). This change to a portion of the Rancho Mission Viejo Planned Community area resulted in administrative corrections to the Rancho Mission Viejo Planned Community Development Map and Rancho Mission Viejo Plan Statistical Table in February 2011. As revised, the Rancho Mission Viejo Planned Community totals 22,683 acres with approximately 16,915 acres (or approximately 74.57 percent) identified for open space uses with 5,768 acres for development uses. However, it should be noted, though the amount of open space designated within the Rancho Mission Viejo Planned Community was reduced as a result of the annexation (i.e., from 16,942 acres to 16,915 acres), the overall acreage in the Habitat Reserve was not modified. The open space areas acquired in conjunction with the Rancho Mission Viejo Riding Park at San Juan Capistrano have a conservation easement overlay; therefore, no recreational activities or other development will be allowed in these areas.

2.5 REGULATORY AGENCIES PLANS AND APPROVALS

As previously noted, concurrently with the development of the Rancho Mission Viejo Planned Community, two other major planning and regulatory programs were developed: the Southern Subregion NCCP/MSAA/HCP and the SAMP. Both of these plans integrated the development of the Rancho Mission Viejo Planned Community into their baseline assumptions. Therefore, the technical analysis conducted as part of these larger subregional planning programs have assumed development consistent with the Master Area Plans and Subarea Plans. These plans, and their associated approvals, will not be affected by the proposed Project or this Addendum. All these approvals will continue to apply to the Rancho Mission Viejo Planned Community.

2.5.1 SOUTHERN SUBREGION NCCP/MSAA/HCP AND FINAL EIR 584

The Southern Subregion NCCP/MSAA/HCP and EIR/EIS were prepared by the County of Orange in cooperation with the CDFW and the USFWS in accordance with the provisions of the NCCP Act, CESA, FESA, and Section 1600 et seq. of the *California Fish and Game Code.* The Southern Subregion NCCP/MSAA/HCP provides for the conservation of designated State- and federally listed and unlisted species and associated habitats that are currently found within the 132,000-acre NCCP/MSAA/HCP study area. The NCCP/MSAA/HCP is a voluntary, collaborative planning program involving landowners, local governments, State and federal agencies, environmental organizations, and interested members of the public. The purpose of the NCCP Program is to

provide long-term, large-scale protection of natural vegetation communities and wildlife diversity while allowing compatible land uses and appropriate development and growth. The NCCP process was initiated to provide an alternative to "single species" conservation efforts. The shift in focus from single species, project-by-project conservation efforts to large-scale conservation planning at the natural community level was intended to facilitate regional and subregional protection of a suite of species that inhabit a designated natural community or communities.

The proposed Conservation Strategy of the plan "focuses on long-term protection and management of multiple natural communities that provide habitat essential to the survival of a broad array of wildlife and plant species" (County of Orange 2006d). The NCCP/MSAA/HCP creates a permanent habitat reserve consisting of (1) 11,950 County of Orange-owned acres contained within 3 existing County regional and wilderness parks (O'Neill Regional Park, Riley Wilderness Park, and Caspers Wilderness Park) and (2) 20,868 acres owned by Rancho Mission Viejo (RMV).

To address the potential impacts associated with the NCCP/MSAA/HCP, the Joint Programmatic EIR/EIS (of which FEIR 584 is the CEQA document), future projects were identified by the participating landowners (i.e., the County of Orange, SMWD, and RMV), which upon approval of the SSHCP and issuance of the Incidental Take Permits (ITPs) by USFWS became "Covered Activities". The Rancho Mission Viejo Planned Community and associated infrastructure was identified as the RMV Covered Activity.

With respect to the CEQA document, the County of Orange Board of Supervisors certified the EIR, hereinafter referred to as "FEIR 584", on October 24, 2006. With respect to the NEPA documentation, the USFWS distributed the Final EIS for public review on November 13, 2006. The Implementation Agreement (IA) was signed by the Participating Landowners (i.e., the County, RMV, and the Santa Margarita Water District [SMWD]) in December 2006. The USFWS issued a Record of Decision, signed the IA, approved the Southern Subregion HCP, and issued Federal Endangered Species Act (FESA) Section 10(a)(1)(B) ITPs to RMV and the SMWD for federally listed species on January 10, 2007 (1-6-07-F-812.8) ("the Opinions") for the HCP component of the Draft Southern Subregion NCCP/MSAA/HCP, referred to hereinafter as the Southern Subregion HCP (SSHCP).[4]

The Opinions state that proposed incidental take will occur as a result of habitat loss and disturbance associated with urban development and other proposed activities (i.e., Covered Activities) identified in the SSHCP. The Opinions further identify "construction of residential, commercial, industrial and infrastructure facilities" as RMV-Covered Activities. The Opinions address 6 federally listed animals, 1 federally listed plant, and 25 unlisted plants and animals for a total of 32 species.

The CDFW issued an MSAA for the Rancho Mission Viejo Planned Community on September 29, 2008. The MSAA covers the activities associated with implementation of the approved development. The covered activities include (1) development in Planning Areas 2, 3, 4, 5, and 8;[5] (2) cultivation of orchards; (3) roadway improvements; (4) construction of bikeways and trails; (5) sewer and wastewater facilities; (6) drainage, flood-control, and water quality facilities; (7) maintenance of existing facilities within the Rancho Mission Viejo Planned Community

[4] The distinction between the Draft Southern Subregion NCCP/MSAA/HCP and the SSHCP is important. The SSHCP, as the federal component of the NCCP/MSAA/HCP, is the federally approved Habitat Conservation Plan for which the Section 10(a)(1)(B) ITP was issued. The Project impacts reported herein are based, for the most part, on the analysis reported in the Southern Subregion NCCP/MSAA/HCP and which were incorporated into the SSHCP. Therefore, all impacts authorized by the SSHCP ITP are the same as those reported in the Southern Subregion NCCP/MSAA/HCP and these documents are fundamentally the same for this purpose.

[5] Planning Area 1 was permitted separately through a standard Streambed Alteration Agreement.

boundary; (8) habitat restoration; (9) geotechnical investigations; and (10) relocation of the RMV headquarters.

2.5.2 SPECIAL AREA MANAGEMENT PLAN

A SAMP is a voluntary watershed-level planning and USACE permitting process involving local landowners and public agencies that seek permit coverage under Section 404 of the Federal Clean Water Act for future actions that affect jurisdictional "waters of the U.S.". The purpose of a SAMP is to provide for reasonable economic development and the protection and long-term management of sensitive aquatic resources (biological and hydrological). Under a SAMP, to the extent feasible, federal "waters of the U.S." (including wetlands) are avoided and unavoidable impacts are minimized and mitigated. The San Juan Creek and Western San Mateo Creek Watersheds SAMP provides a framework for permit coverage for the San Juan Creek Watershed (approximately 113,000 acres) and the western portion of the San Mateo Creek Watershed (approximately 15,104 acres). The SAMP study area includes the Rancho Mission Viejo Planned Community area.

The SAMP, which was approved by the USACE in 2007, establishes three regulatory permitting procedures: (1) Regional General Permit Procedures for Maintenance Activities Outside of the Rancho Mission Viejo Planned Community; (2) Letter of Permission Procedures for Future Qualifying Applicants Subject to Future Section 404 (b)(1) Guidelines Review Outside the Rancho Mission Viejo Planned Community; and (3) Long-Term Individual Permits/Letters of Permission for Dredge and Fill Activities within the Rancho Mission Viejo Planned Community. With respect to the Rancho Mission Viejo Planned Community, the USACE issued an Individual Permit of extended duration to specify allowable impacts to "waters of the U.S." over the life of the Rancho Mission Viejo Planned Community project. The long-term Individual Permit requires additional review and analysis as individual projects are proposed within the Rancho Mission Viejo Planned Community to ensure consistency with allowable impacts and the terms and conditions of this long-term Individual Permit. The USACE will review specific activities under the Letter of Permission procedures for the geographic area covered by the Individual Permit as each activity is proposed for implementation.

2.6 RANCHO MISSION VIEJO PLANNED COMMUNITY MASTER AREA PLAN AND SUBAREA PLANS APPROVALS

Per the *Ranch Plan Planned Community Program Text,* a Master Area Plan is required for each planning area proposed for development. A Master Area Plan shows the relationship of proposed uses within the entire planning area. A Master Area Plan consists of a map, a set of statistics, and text that describe the location, density, and intensity of proposed uses within a planning area (the full requirements are listed in Section II.B.3.a of the *Ranch Plan Planned Community Program Text*). It is a tool to describe how special features or planning concerns will be addressed. All grading, development, and improvements shall be in substantial conformance with the provisions of the approved Master Area Plan. The Planning Commission is the approving authority for all Master Area Plan applications.

The Master Area Plan will divide the planning area into subareas. Prior to approval of any subdivision within each subarea, a Subarea Plan shall be prepared. The Subarea Plans must be consistent with the Master Area Plan. The Subarea Plans provide more detail on the proposed development. The Subarea Plans provide information on the key features of the development proposed in the Subarea. This would include, but not be limited to (1) the specific residential use categories and other non-residential uses; (2) locations and acreage of park, recreation, and other open space uses; (3) circulation features; (4) a concept grading plan; and (5) community facility

locations. The full requirements of Subarea Plans are identified in the *Ranch Plan Planned Community Program Text*.

In July 2006, the County of Orange approved the Master Area Plan (PA06-0023) and five Subarea Plans (PA06-0024 through PA06-0028) for Planning Area 1. Addendum No. 1 to FEIR 589 was approved by the County of Orange to support the approval of the Master and Subarea Plans. The County approved the following components for Planning Area 1:

- Planned Community (PC) Statistical Table and PC Development Map.
- Planning Area 1 Master Area Plan.
- Five Subarea Plans for Planning Area 1.
- Vesting tentative tract maps (VTTM) for Planning Area 1 (VTTM 10751, VTTM 17052, VTTM 17053, VTTM 17054, and VTTM 17055).
- Grading Permits (GA 06-0037, GA 06-0045, and GA 06-0046).
- Required infrastructure improvements.

Subsequent to the approval of the "A" Vesting Tentative Tract Maps (listed above), "B" level Tentative Tract Maps (TTMs) that were found in substantial compliance with the "A" maps, were approved. Subsequent to these approvals, changes to the "B" level TTMs and a further Addendum (No.1.1) were approved by the County of Orange in February 2011. Planning Area 1 opened for sale in mid-summer of 2013.

In March 2013, the County of Orange approved the Master Area Plan (PA13001) and four Subarea Plans (PA130002, PA 130003, PA130004 and PA 130006) for Planning Area 2. Planning Area 2 Addendum to Final EIR No. 589 was approved by the County of Orange to support the approval of the Master and Subarea Plans. The County approved the following components for Planning Area 2:

- Planned Community (PC) Statistical Table and PC Development Map.
- Planning Area 2 Master Area Plan.
- Four Subarea Plans for Planning Area 2 (Subareas 2.1, 2.2, 2.3 and 2.4)
- Vesting tentative tract maps (VTTM) for Planning Area 2, Subareas 2.1 and 2.2 (VTTM 17561 and 17562 respectively).
- Grading Permits (GA 130010 for Subarea 2.1 and GA 130013 for Subarea 2.2).
- Required infrastructure improvements.

Subsequent to the approval of the "A" Vesting Tentative Tract Maps (listed above), "B" level Tentative Tract Maps (TTMs) that were found in substantial compliance with the "A" maps, were approved. Planning Area 2 is currently under construction with a grand opening anticipated in mid-summer of 2015.

2.7 INFRASTRUCTURE IMPROVEMENTS

Infrastructure improvements have been approved to support the Rancho Mission Viejo Planned Community. These improvements are discussed below and their locations are depicted on Local Vicinity Map (Exhibit 2). Exhibit 2 also identifies the locations of other projects in the area, which are discussed in Section 2.8 of this Addendum.

2.7.1 COW CAMP ROAD AND OTHER INFRASTRUCTURE IMPROVEMENTS

The Rancho Mission Viejo Planned Community and its associated FEIR 589 identified that certain supporting infrastructure facilities (e.g., roadways) would be built. Cow Camp Road is one such roadway. Cow Camp Road is proposed as an east-west major arterial highway with up to a 60 mile per hour (mph) design speed that will extend from Antonio Parkway to the existing Ortega Highway (State Route 74) near the common boundary of the Rancho Mission Viejo Planned Community and Caspers Wilderness Park. The segment adjacent to and within Planning Areas 1 and 2 is known as "Segment 1" and would include four "T" signalized intersections (one at Antonio Parkway and three within Planning Area 2) and a bridge at Cañada Chiquita (Chiquita Bridge). To adhere to existing hillside contours, construction phasing, habitat preservation and to provide enhanced wildlife crossings, the eastbound and westbound lanes across Cañada Chiquita would be built as two separate bridge structures. The typical cross-section for Cow Camp Road would be consistent with the County of Orange Standard Plans for a major arterial highway. In its ultimate configuration, there would be 6 general-purpose lanes (3 westbound and 3 eastbound), 8-foot-wide shoulders, and 6-foot-wide sidewalks with a raised curbed median that is 20 feet wide. Cow Camp Road was addressed in FEIR 589 and further addressed in an Addendum to FEIR 589 approved by the County of Orange in 2008. A portion of Segment 1 of Cow Camp Road has been constructed with the remaining portion of Segment 1 presently under construction and scheduled for completion in early 2015.

Certain infrastructure improvements have also been constructed since the approval of the Rancho Mission Viejo Planned Community, namely a new substation within the boundary of Planning Area 2. This substation was constructed by San Diego Gas and Electric (SDG&E) to ensure adequate electrical service for the Rancho Mission Viejo Planned Community and surrounding area and also to ensure reliability of service to both existing and new customers. The substation is located at the south-eastern corner of Planning Area 2, north of San Juan Creek. The substation has been named the Rancho Mission Viejo Substation and has been operational since October 2011.

2.7.2 ZONE 1 AND ZONE A RESERVOIR FACILITIES

To serve Planning Areas 1, 2, and 3, the SMWD has constructed certain water conveyance and storage facilities. These facilities were included in the analysis contained in FEIR 589 as part of the Rancho Mission Viejo Planned Community. The facilities located in Chiquita Canyon include approximately 12,000 linear feet (LF) of domestic water (DW) transmission main; 11,300 LF of recycled water (RW) transmission main; two 2.0-million-gallon (MG) domestic water (DW) reservoirs, and one 4.0-MG recycled water reservoir. The DW and RW reservoir sites are at pad elevations of 618 feet and 548 feet, respectively, and they comprise approximately 7 acres combined. All reservoirs are above grade welded-steel tanks. The DW reservoir site includes two 104-foot-diameter tanks, each with a high water level (HWL) of 650 feet, corresponding to SMWD's Zone I DW distribution system. The RW reservoir site includes a single 146-foot-diameter tank with an HWL of 580 feet. It will serve SMWD's Zone A RW distribution system. A minimum 20-foot wide of paved access is provided around each tank. SMWD, as the lead agency for this project, prepared and approved an Addendum to FEIR 584 as the CEQA compliance documents in June 2011. These reservoirs are currently under construction.

2.7.3 ZONE 2 AND ZONE B RESERVOIR FACILITIES

SMWD, as lead agency, is preparing an Addendum to FEIR 584 for the design and construction of reservoirs for the Zone B/Zone 2 service areas. To serve Planning Areas 2 and 3, the SMWD will be constructing certain water conveyance and storage facilities. These facilities were included in the analysis contained in FEIR 589 as part of the Rancho Mission Viejo Planned Community.

The facilities are located in Chiquita Canyon south of Tesoro High School. The proposed facilities include the construction of approximately 1,500 LF of a 24-inch-diameter DW transmission main; 11,500 LF of a 20-inch-diameter RW transmission main; one 3.0-MG domestic water reservoir; and one 2.0-MG recycled water reservoir. These facilities are intended to serve the SMWD's Zone II DW distribution system and Zone II RW distribution system.

The DW and RW transmission mains are proposed to be aligned parallel to each other in a single easement. A 20-foot-wide access road with an all-weather surface will be constructed within the easement for SMWD maintenance purposes. The pipelines will begin near the existing Zone I/Zone A tank site, north of the Planning Area 2 boundary. From there, the pipelines' alignment extend southwesterly in the existing Zone I/Zone A access road. The pipelines alignment turns north where the existing Chiquita Canyon access road meets the existing Zone I/Zone A access road. The alignment then follows the existing Chiquita Canyon access road for approximately 1,500 LF before turning northeasterly and continuing to the proposed reservoir site.

The DW and RW reservoirs are proposed to be located at a single site, which has an area of approximately 1.8 acres and is at a pad elevation of 798 feet. Both reservoirs are to be constructed as above grade, welded-steel tanks. The DW tank will be 127 feet in diameter, and the RW tank will be 104 feet in diameter. Both tanks will be approximately 45 feet high and have an operational HWL set at 830 feet. A 25-foot-wide paved perimeter access road is provided around each tank. The reservoir site will also have space for a photovoltaic solar panel system, which will be used to supply power for system control and data acquisition (SCADA) and cathodic protection systems. The project also includes storm drainage facilities and a detention basin to accommodate storm water runoff from the graded reservoir site and access road.

2.8 OTHER PROJECTS IN THE AREA

2.8.1 EXTENSION OF STATE ROUTE 241

The Foothill Transportation Corridor (FTC) has been on the Orange County Master Plan of Arterial Highways (MPAH) since 1981 and is designated a Transportation Corridor. The route was identified to run along the foothills in southeastern Orange County parallel to Interstate (I) 5. In 1986, a joint-powers authority, known as the Transportation Corridor Agencies (TCA), was formed to oversee the planning, design, financing, and construction of the FTC and two other tollroads in Orange County. Recognizing the regional nature of the tollroads, the FTC was added to the State Highway System and designated as State Route (SR) 241. Once constructed, the roadway is transferred to the State of California. Currently, SR-241 has been constructed from SR-91 in the City of Yorba Linda south to Oso Parkway, near the City of Rancho Santa Margarita, a distance of over 24 miles. The route has been planned to extend south to I-5 just south of the Orange/San Diego County line.

Plans to complete SR-241 from its current terminus at Oso Parkway to I-5, have been analyzed for more than 30 years. An EIR/EIS was prepared addressing the environmental impacts of this approximate 14-mile southerly extension. A preferred alignment was selected by the TCA, the Federal Highway Administration (FHWA), the U.S. Environmental Protection Agency (USEPA), the USFWS, the USACE, and the California Department of Transportation (Caltrans). The selected route would extend through Planning Areas 2 and 5 of the Rancho Mission Viejo Planned Community, cross into San Diego County, and connect to I-5 in the vicinity of the San Onofre Nuclear Generating Station. The southern portion of the alignment is within the California Coastal Zone, which required approval of the alignment by the California Coastal Commission (CCC). In 2008, the CCC rejected the selected alignment as being inconsistent with the California Coastal Act. This decision was appealed by the TCA to the Secretary of Commerce. In December 2008, the Secretary of Commerce upheld the CCC decision.

In October 2011, engineering and environmental work began on a plan to extend the current SR-241 toll road from its existing terminus at Oso Parkway to Cow Camp Road in Planning Area 2, a distance of approximately 5.5 miles. This segment, which is known as the Tesoro Extension, is outside the Coastal Zone and avoids all water subject to federal jurisdiction. In February 2013, the TCA prepared an *Addendum to the South Orange County Transportation Infrastructure Improvement Project Final Subsequent Environmental Impact Report*, which focused on the Tesoro Extension. However, in June 2013, the San Diego Regional Water Quality Control Board (San Diego Water Board) denied the TCA's application for a Waste Discharge Permit per the Porter-Cologne Water Quality Control Act. The TCA filed for a review by the State Water Board of the denial, requesting that the San Diego Water Board provide the factual and legal basis for its decision. The petition was heard by the State Water Board on September 23, 2014. At that meeting, the State Water Board remanded the matter to the San Diego Water Board with direction to provide the factual and legal basis for its decision.

The proposed Tesoro Extension alignment is similar to the "F" Street alignment. On September 5, 2014, the TCA entered into an option agreement (Option Agreement) with RMV to obtain the right-of-way for the Tesoro Extension. In relevant part, the Option Agreement provides that it may be terminated by RMV in the event that RMV, prior to exercise of the option by TCA, obtains permits and funding for, and elects to proceed with, construction of "F" Street. In that event, the Tesoro Extension would not be built.

2.8.2 "F" STREET

Though not in Planning Areas 3 and 4, "F" Street would provide an important north-south roadway that would enhance the Project access to the roadway network beyond the Rancho Mission Viejo Planned Community. "F" Street is being processed as a separate project (Permit ST140005) and has its own CEQA documentation.

The overall Rancho Mission Viejo Planned Community includes an arterial circulation system designed to move traffic from Planning Area to Planning Area and thereafter, onto the surrounding local circulation network. FEIR 589 described a north-south arterial as traversing a portion of Planning Area 2 and connecting to Oso Parkway in the scenario that assumed SR-241 was not extended. Since approval of the Rancho Mission Viejo Planned Community, this roadway has been temporarily named "F" Street.

"F" Street is being developed as a rural secondary highway, which runs in a general north-south direction of travel. As a rural secondary highway, it will primarily serve local Rancho Mission Viejo Planned Community traffic to and from Oso Parkway. The roadway will connect at Oso Parkway at the intersections of the on- and off-ramps from the existing SR-241. Extending south, it will run through Planning Area 2 in Subarea 2.5, along the eastern edge of Planning Area 2 South (Planning Subareas 2.1 through 2.4) before connecting to Cow Camp Road at the southern boundary of Planning Area 2 in Subarea 2.1.

This arterial road will consist of 2 general purpose lanes in both directions of travel with a variable width median (i.e., 4 to 14 feet). Storm water treatment facilities (e.g., four combination basins) will be constructed adjacent to the roadway grading. A pedestrian and bicycle trail will be located on the west side of "F" Street to provide for opportunities for alternative non-motorized vehicular transportation modes.

In April 2014, geometric approval for "F" Street was granted by the County of Orange. The portion of "F" Street located within Planning Area 2 South has been rough graded. A Project Study Report is being prepared to support detailed design of "F" Street. A separate Addendum to FEIR 584 and FEIR 589 is being prepared for "F" Street. The County of Orange is the lead agency on the

approval of the roadway alignment and design. "F" Street would require a minor amendment to the SSHCP, which is being processed through USFWS. As part of the minor amendment process, RMV has agreed to reduce development in Planning Area 4. Additionally, Planning Subarea 2.5 would be impacted by the roadway alignment; and therefore, would not be developed. Approval of "F" Street is anticipated in early 2016.

2.8.3 LA PATA EXTENSION

The La Pata Avenue Gap Closure and Camino Del Rio Extension Project is designed to complete the planned improvements for La Pata Avenue as identified in the County of Orange Master Plan of Arterial Highways.[6] When complete, the improvements would connect Avenida La Pata in the City of San Clemente with La Pata Avenue in the City of San Juan Capistrano via a four-lane roadway, a distance of about 4.5 miles. The roadway, which crosses the Prima Deshecha Landfill in unincorporated Orange County, will provide a north-south roadway inland to I-5. The improvements will accommodate pedestrians and bicyclists by constructing streetlights, bike lanes, and sidewalks. It will also enhance trail connectivity through the construction of a pedestrian bridge that links the Prima Deshecha Trail and Forster Ridgeline Trail.

The County of Orange approved the contract for construction in December 2013 and construction was initiated in April 2014. Construction of the roadway is proposed in three phases. The first phase—which requires the removal of refuse from the Prima Deshecha Landfill, relocation of major utility lines, drainage improvements, and bridge construction—will provide four travel lanes from the existing La Pata Avenue just south of Vista Montana to Calle Saluda, a distance of approximately 2.27 miles. This phase is expected to be completed in fall 2016. The second phase will widen the existing La Pata Avenue with one additional travel lane in each direction between Ortega Highway and just south of Vista Montana. The final phase, will extend Camino Del Rio from its current terminus to the newly extended La Pata Avenue (County of Orange 2014a).

The project is funded by State and local financing, including funding from the Orange County Transportation Authority's (OCTA's) Renewed Measure M (M2), Ladera Ranch and the Rancho Mission Viejo Community Facilities Districts, State Proposition 1B Funds, La Pata Road Fee Program, OC Waste & Recycling, OC Public Works Road Fund (State Gas Tax), the City of San Juan Capistrano, South County Road Improvement Program (SCRIP), and the City of San Clemente (County of Orange 2014b).

2.8.4 CHIQUITA WATER RECLAMATION PLANT EXPANSION

The Chiquita Water Reclamation Plan (CWRP) Expansion Project involves the upgrade and expansion of the CWRP to provide preliminary, primary, secondary, and tertiary wastewater treatment for flows up to 10.5 MGD. The secondary treatment system will be expanded from its current permit capacity of 9.0 MGD up to the projected future flow of 10.5 MGD. Additionally, the tertiary treatment capacity to produce Title 22 reclaimed water for recycling and reuse will be expanded from its current permit capacity of 5.0 MGD up to the projected future flow of 10.5 MGD. The solids handling systems, biogas handling systems, odor control, and other ancillary mechanical, electrical, and instrumentation systems will also be upgraded and expanded to serve the projected future flows and loadings at the CWRP. Additionally, the project includes the construction of a biosolids reduction system that will reduce the CWRP's volume of biosolids by transforming the waste into a biofuel that can be used to power the reduction system and produce additional renewable energy for SMWD use. The Mitigated Negative Declaration was approved by the SMWD Board of Directors in February 2014. The implementation will be phased.

[6] The roadway is known as Avenida La Pata in the City of San Clemente and La Pata Avenue in unincorporated Orange County and the City of San Juan Capistrano.

Equipment modifications has been initiated and other improvements occurring over the next few years.

2.8.5 GOBERNADORA MULTI-PUPOSE BASIN

The Gobernadora Multipurpose Basin is a 26-acre facility located north of the Planning Area 3 development area and south of the community of Coto de Caza. The basin, which is currently under construction, will capture and naturally treat urban runoff and storm flows, and use that water to help meet irrigation demands in the nearby community. The basin is receives flows from Gobernadora Creek, which drains the Coto de Caza development. The total basin provides a maximum flood storage capacity of 120 acre-feet. This project is a being constructed through a partnership of SMWD, RMV and Orange County Public Works. Benefits of the basin will include:

- flood mitigation
- urban stormwater treatment
- groundwater recharge
- groundwater recovery
- non-potable water reclamation
- stream stabilization and habitat restoration
- regional trail connectivity.

The project is being constructed in two phases. The first phase involves the construction of the upper basin, pump station, and pipelines. The upper basin provides for water quality treatment, groundwater infiltration, and flood control. The second phase involves the lower basin, which will serve as a flood basin. The project is expected to be completed in 2015. (County of Orange 2014c)

SECTION 3.0 PROJECT DESCRIPTION

3.1 PROJECT LOCATION

3.1.1 RANCHO MISSION VIEJO PLANNED COMMUNITY

The 22,683-acre[7] Rancho Mission Viejo Planned Community is located in southeast Orange County within unincorporated Orange County. The Ladera Ranch Planned Community (Ladera Ranch) and the cities of San Juan Capistrano and San Clemente border the Rancho Mission Viejo Planned Community on the west. The planned community of Coto de Caza and the City of Rancho Santa Margarita border the northern edge of the site; the United States Marine Corps Base (MCB) Camp Pendleton in San Diego County borders the southern edge, and Caspers Wilderness Park, the Cleveland National Forest, and several private properties in Riverside and San Diego Counties border the site on its eastern edge. The Rancho Mission Viejo Planned Community, as well as the location of Planning Areas 3 and 4 (discussed below) are presented in a regional and local context on Exhibits 1 and 2, respectively.

3.1.2 PROJECT LOCATION

Planning Areas 3 and 4 are located north and south of Ortega Highway, east of Antonio Parkway, the planned community of Ladera Ranch, and the Rancho Mission Viejo Planned Community village of Sendero, south of the planned community of Coto de Caza, and west of Caspers Wilderness Park.

Planning Area 3 is located in Cañada Gobernadora. Gobernadora Creek flows in a southerly direction along the westerly boundary of Planning Area 3 to its confluence with San Juan Creek. San Juan Creek, which is a dominant physical feature of the larger Rancho Mission Viejo Planned Community, flows in a northeasterly to southwesterly direction and is located south of Planning Area 3.

Planning Area 4 is located north and south of Ortega Highway; east of Antonio Parkway and Planning Area 3; and south of Caspers Wilderness Park. Planning Area 4 is located in Central San Juan Creek Canyon. San Juan Creek is located north of Planning Area 4.

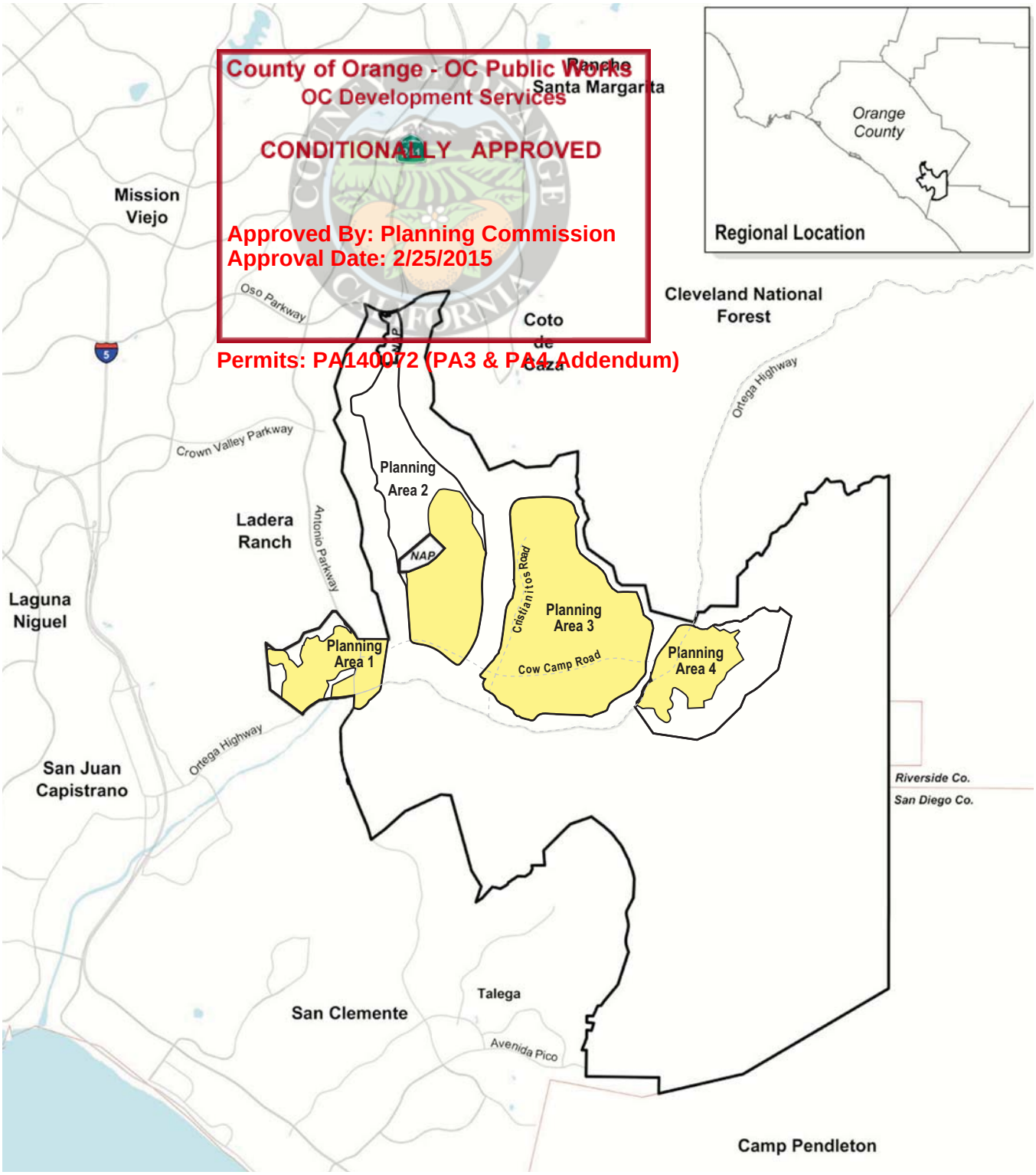
3.2 PROJECT SETTING

3.2.1 ENVIRONMENTAL SETTING AND EXISTING LAND USES

Portions of Planning Area 3 have been used for agricultural, nursery, and other lease uses for the past 120 years. Existing agricultural land uses in Planning Area 3 include avocado and citrus production areas and barley fields. There are a number of commercial uses operating in the Planning Area on leases. These include a large-scale commercial nursery and industrial-type leases. Leaseholders include Color Spot Nursery, CR&R/Solag Disposal Company, Calmat, Ewles Materials, Olsen Pavingstone, Cemex, and Greenstone Materials.

Along the southern boundary of Planning Area 3 is an area known historically as Cow Camp. Existing uses in this area include homes for ranch agricultural employees, ranch offices, a horse

[7] The Rancho Mission Viejo Planned Community, as addressed in FEIR 589, covered 22,815 acres. In January 2010, the City of San Juan Capistrano acquired the Rancho Mission Viejo Riding Park and surrounding open space area acres located in the southwestern quadrant of the Ortega Highway/La Pata Avenue Intersection. The Local Agency Formation Commission (LAFCO) agreed to extend the San Juan Capistrano city limits east to La Pata Avenue on the south side of Ortega Highway. As a result of the purchase and annexation, the size of the Rancho Mission Viejo Planned Community was reduced to 22,683 acres.



Source: RMV 2014

Regional Location Map

Exhibit 1

Planning Areas 3 and 4 Master and Subarea Plans

N W E S

Bonterra PSOMAS

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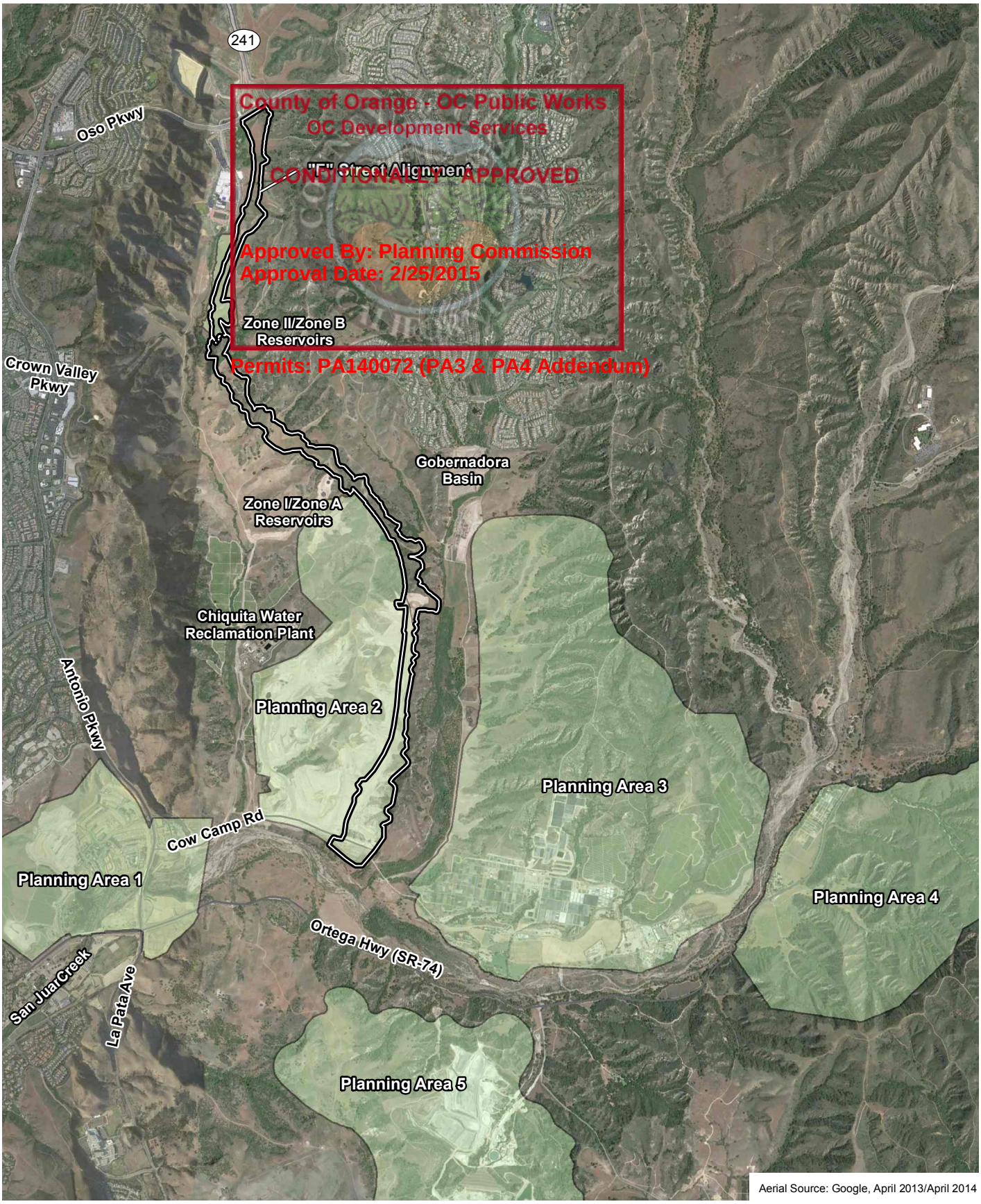

Aerial Source: Google, April 2013/April 2014

Local Vicinity Map

Exhibit 2

Planning Areas 3 and 4 Master and Subarea Plans

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riding and roping arena, pastures and stock yards, a tack room, shop equipment storage, and a restroom facility. There are also several unpaved ranch roads located within this Planning Area. The Gobernadora Ecological Restoration Area (GERA) is located within the Planning Area 10 open space adjacent to the western edge of the Planning Area 3 development area.

Cow Camp Road is designated on the MPAH as a future roadway that will begin at Antonio Parkway, north of San Juan Creek, and extend to the east ultimately connecting to Ortega Highway. The roadway will be implemented in phases throughout the development of the Rancho Mission Viejo Planned Community. As discussed above, Segment 1 of Cow Camp Road traverses the southern portion of Planning Area 2 and is presently under construction. Segment 2 of Cow Camp Road will have a bridge over Gobernadora Creek; it will extend into Planning Area 3 and generally be located along the southern boundary of the planning area before crossing San Juan Creek and entering Planning Area 4.

Several major public facilities and utilities exist in Planning Area 3. These include the South County pipeline, which is owned by the SMWD and 138-kilovolt (kV) electrical transmission lines owned by SDG&E. In addition, Rancho Mission Viejo has its agricultural irrigation system located in or adjacent to the north-south access road that parallels GERA and in the east-west ranch access road that parallels San Juan Creek.

As previously mentioned, just north of Ortega Highway, San Juan Creek flows in a northeasterly to southwesterly direction. San Juan Creek is a major drainage facility that discharges into the Pacific Ocean in the vicinity of the City of Dana Point. Major tributaries to San Juan Creek are Arroyo Trabuco, Oso Creek, Cañada Chiquita, Cañada Gobernadora, Bell Canyon Creek, and Verdugo Canyon Creek. Cañada Gobernadora or Gobernadora Creek is located in Planning Area 3.

The Rancho Mission Viejo Planned Community contains a diverse population of flora and fauna species, including sensitive vegetation communities that provide habitat to sensitive species. These vegetation communities include, but are not limited to, scrub habitats, chaparral, vernal pools and seeps, riparian habitat, and woodland habitat. Vegetation communities that occur in Planning Area 3 include coastal sage scrub, chaparral, grassland, open water, freshwater marsh, alkali meadow, stream courses, riparian habitat, and oak woodland and forest.

Current Planning Area 4 land uses include the Tree of Life Nursery, a wholesale native plant nursery, which has cultivation areas, greenhouses, an office building, a retail building, a barn, and trailers. The former RJO Horse Ranch is also located in Planning Area 4 and includes two residences and two barns. The field south of the former RJO Horse Ranch and east of Ortega Highway is used for barley cultivation. A pump station for the Nichols Institute is located in the eastern portion of Planning Area 4. Vegetation communities that occur in Planning Area 4 include coastal sage scrub, chaparral, grassland and oak woodland and forest.

3.2.2 REGULATORY SETTING

In accordance with Section 7-9-103 of the Orange County Zoning Code, "PC 'Planned Community' District", the Rancho Mission Viejo Planned Community is comprised of the following four components:

- The *Ranch Plan Planned Community Program Text*, specifying the regulations applicable to all areas of the Rancho Mission Viejo Planned Community.
- The Planned Community (PC) Zoning Map, showing the exterior boundaries of the Rancho Mission Viejo Planned Community. This Zoning Map includes a statistical

summary regulating the maximum/minimum of certain aspects of development within the Rancho Mission Viejo Planned Community as a whole.

- A PC Development Map, providing general and, in certain instances, detailed information about the Rancho Mission Viejo Planned Community.
- A Statistical Table regulating land uses within each planning area.

The *Ranch Plan Planned Community Program Text* provides the regulations and procedures that apply to each of the land use categories established as a part of the Rancho Mission Viejo Planned Community. The regulations and standards adopted as part of the *Ranch Plan Planned Community Program Text* would apply to the development and implementation of the Rancho Mission Viejo Planned Community. In those cases where the standards differ from the Orange County Zoning Code, the *Ranch Plan Planned Community Program Text* standards would provide the applicable regulations.

In order to ensure consistency between the County General Plan and the *Ranch Plan Planned Community Program Text*, the ultimate control for development is the maximum number of residential dwelling units (or acreage of other uses) as depicted on the PC Development Map and indicated on the PC Statistical Table. Changes to uses within the *Ranch Plan Planned Community Program Text,* including transfer of units from one planning area to another or refinements to uses within planning areas, are permitted consistent with the special provisions in the regulations (refer to PC Text for details). Such revisions cannot exceed the overall maximum uses defined in the PC Statistical Table for the *Ranch Plan Planned Community Program Text* as a whole.

3.3 PROJECT DESCRIPTION

The Master Area Plan provides a process to demonstrate that the intent of conceptual development policies contained in the General Plan and the Rancho Mission Viejo Planned Community zoning approvals will be implemented through more precise discretionary measures. The Subarea Plans focus on specific segments of each Planning Area. Planning Areas 3 and 4 are being processed together because of the integral ties between the two development areas based on type of uses and circulation network. As discussed below, Cow Camp Road is the east-west arterial highway that will provide important access to Planning Area 3. The connection of Cow Camp Road to Ortega Highway will be located in Planning Area 4; therefore, it was important to do the master planning for these two development areas in a comprehensive fashion.

Per the *Ranch Plan Planned Community Program Text*, a Master Area Plan is required for each planning area proposed for development. A Master Area Plan shows the relationship of proposed uses within the entire planning area. A Master Area Plan consists of a map, a set of statistics, and text that describe the location, density, and intensity of proposed uses in a planning area (the full requirements are listed in Section II.B.3.a of the *Ranch Plan Planned Community Program Text*). All subsequent projects in each planning area—including grading, development, and improvements—shall be in substantial conformance with the provisions of the approved Master Area Plan. The Planning Commission is the approving authority for all Master Area Plan and Subarea Plan applications and any subsequent amendments with the exception of reallocations and other adjustments that may be approved by the Director, OC Planning, as specified in PC Program Text (Section 11.A.4).

The Project proposes the Master Area Plan and Subarea Plans for Planning Areas 3 and 4 and associated infrastructure improvements. Table 2 provides statistical information for the Rancho Mission Viejo Planned Community reflecting the land use information for Planning Areas 3 and 4.

TABLE 2
RANCHO MISSION VIEJO PLANNED COMMUNITY STATISTICAL SUMMARY

Planning Area	Development Use									Total Gross Development Acres	Open Space Use	Planning Area totals
	Residential		Urban Activity Center (UAC)		Neighborhood Center		Business Park		Golf Resort		Open Space Use	Planning Area totals
	Gross Acres	Maximum Dwelling Units	Gross Acres	Maximum Square Footage of Non-Residential Uses (in thousands)	Gross Acres	Maximum Square Footage (in thousands)	Gross Acres	Maximum Square Footage (in thousands)	Gross Acres		Open Space Acres	Gross Acres
Planning Area 1	446	1,287	5	30	13	95				464	240	704
Planning Area 2	795	2,700	45	500	5	25				845	835	1,680
Planning Areas 3 and 4	**2,416**	**7,500**	**201**	**2,950**	**19**	**145**	**50**	**305**		**2,686**	**627**	**3,313**
Planning Areas 5 and 8	1,705	2,513			13	235	30	915	25	1,773	3,010	4,783
Planning Area 10											12,203	12,203
Subtotal	*5,362*	*14,000*	*251*	*3,480*	*50*	*500*	*80*	*1,220*	*25*			
Total										**5,768**	**16,915**	**22,683**

Revised July 26, 2006, per Planning Commission Resolution # 06-05.
Revised February 23, 2011, per PA110003, PA110004, PA110005, and PA110006.
Revised March 27, 2013, per Planning Commission.
Revised February 2015 per Planning Commission

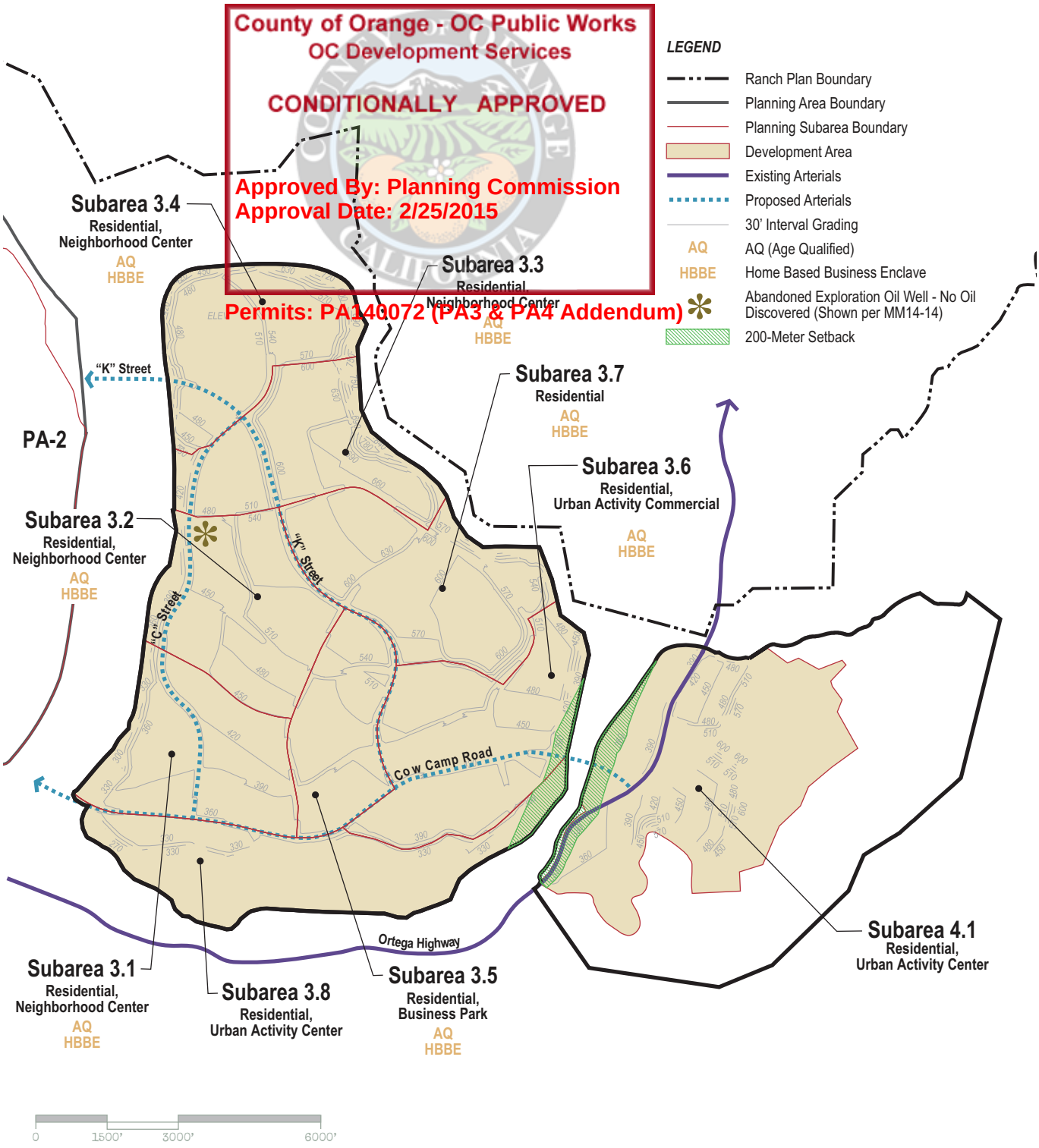
Source: *Draft Master Area Plan for Planning Areas 3 and 4* 2014.

3.3.1 MASTER AREA PLAN FOR PLANNING AREAS 3 AND 4

As proposed, the Master Area Plan land use plan for Planning Areas 3 and 4 would include residential, Urban Activity Center (UAC), Business Park and Neighborhood Center uses as well as public facilities, public parklands, and open space. Exhibit 3 depicts the Land Use Plan with 30-foot grading contours for each planning area. Table 3 provides statistical information for the Planning Areas 3 and 4 subareas. In summary, Planning Areas 3 and 4 provides for 2,416-gross acres of residential development and proposes development of 7,500 dwelling units and 3,500,000 square feet of non-residential uses (201-gross acres of UAC uses with a maximum of 2,650,000 square feet of non-residential use; 19 acres of Neighborhood Center uses with a maximum of 145,000 square feet; and 50 acres of Business Park uses with a maximum of 705,000 square feet). The non-development portion of Planning Area 4 (a total of 612-gross acres) will be dedicated to permanent open space/reserve. The precise location of the remaining 15 acres of open space area shown on the Statistical Table is to be determined at the "A" Tentative Tract level" and may be used to relocate employee housing. As indicated in Section 3.7 of the ROSA, RMV has the right to relocate employee housing. Should employee housing site not be relocated, the additional 15 acres will be dedicated to open space.

The Master Area Plan for Planning Areas 3 and 4 includes following components:

- A Statistical Table (see Table 2)
- A Development Table for Planning Areas 3 and 4 (see Table 3)
- Exhibits including:
  - Land Use Plan (see Exhibit 3)
  - Circulation (see Exhibit 4)
  - Conceptual Domestic Water System (see Exhibit 5)
  - Conceptual Non-Domestic Water System (see Exhibit 6)
  - Preliminary Wastewater System (see Exhibit 7)
  - Preliminary Storm Drainage System (see Exhibit 8)
  - Preliminary Water Quality System (see Exhibit 9)
  - Trails and Bikeways Concept (see Exhibit 10)
  - Agricultural and Other Existing Ongoing Uses (see Exhibit 11)



Source: RMV 2014

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Land Use Plan

Exhibit 3

Planning Areas 3 and 4 Master and Subarea Plans

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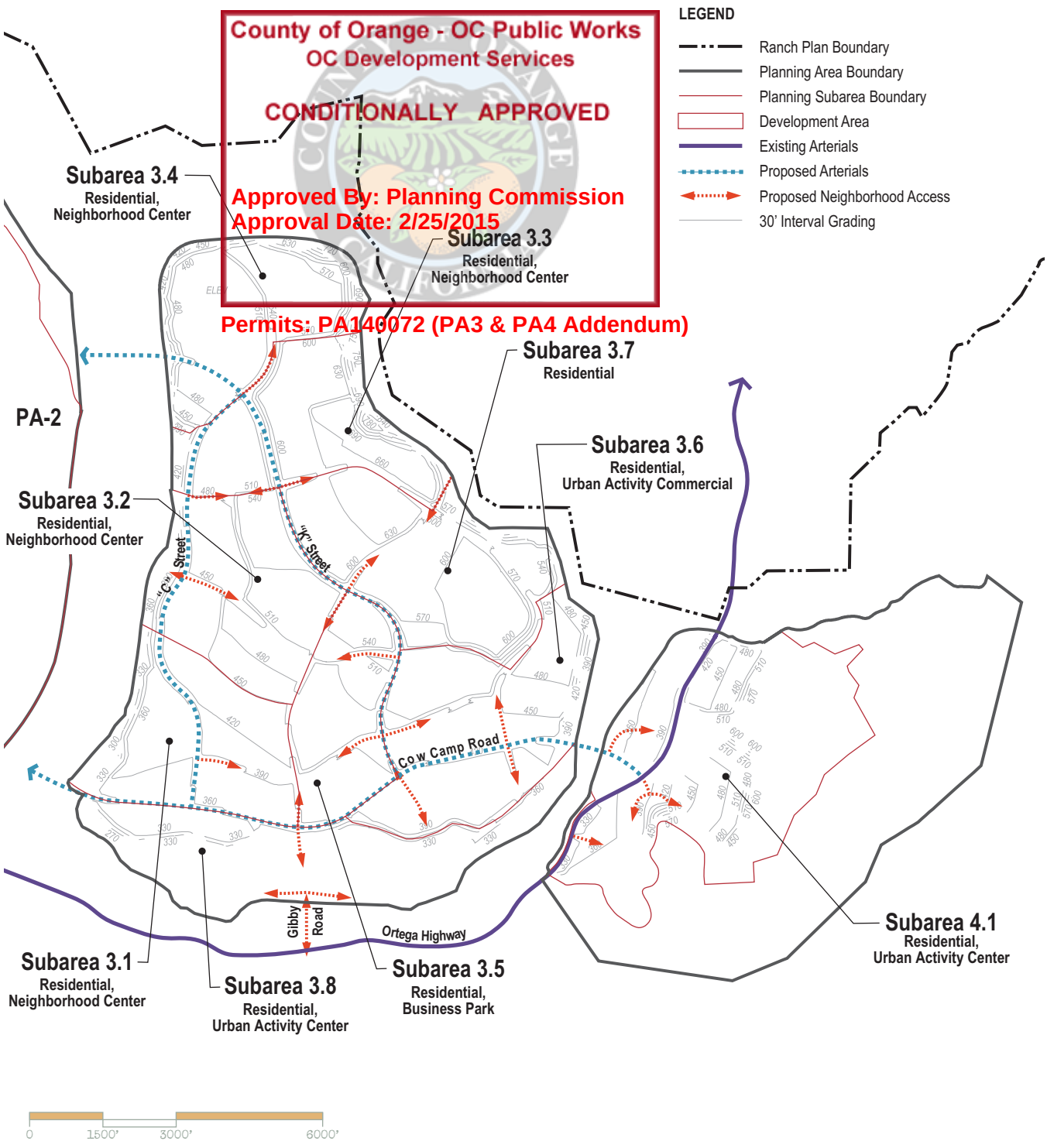

Source: RMV 2014

Circulation Plan

Exhibit 4

Planning Areas 3 and 4 Master and Subarea Plans

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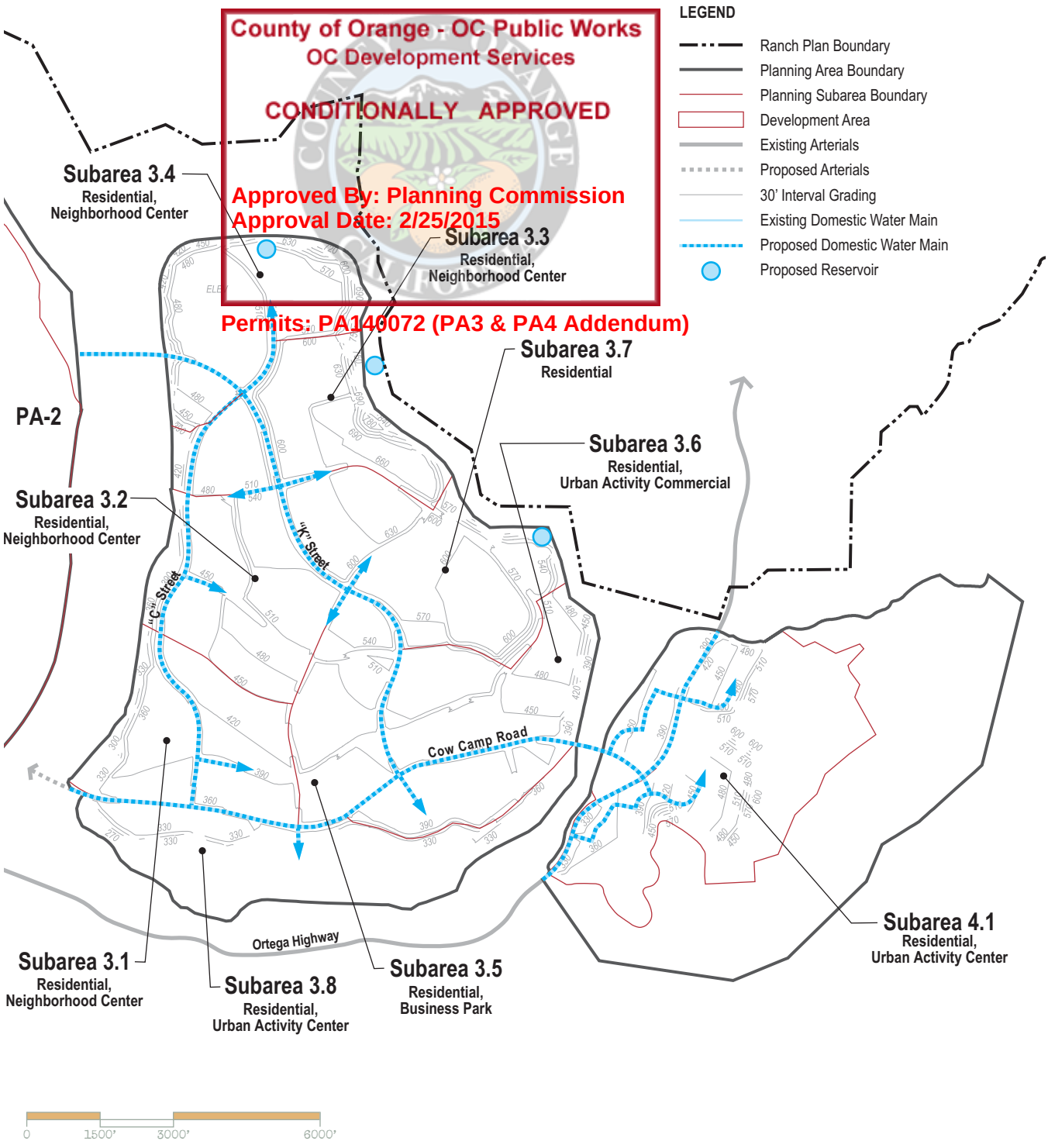

Source: RMV 2014

Conceptual Domestic Water System

Exhibit 5

Planning Areas 3 and 4 Master and Subarea Plans

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Bonterra PSOMAS

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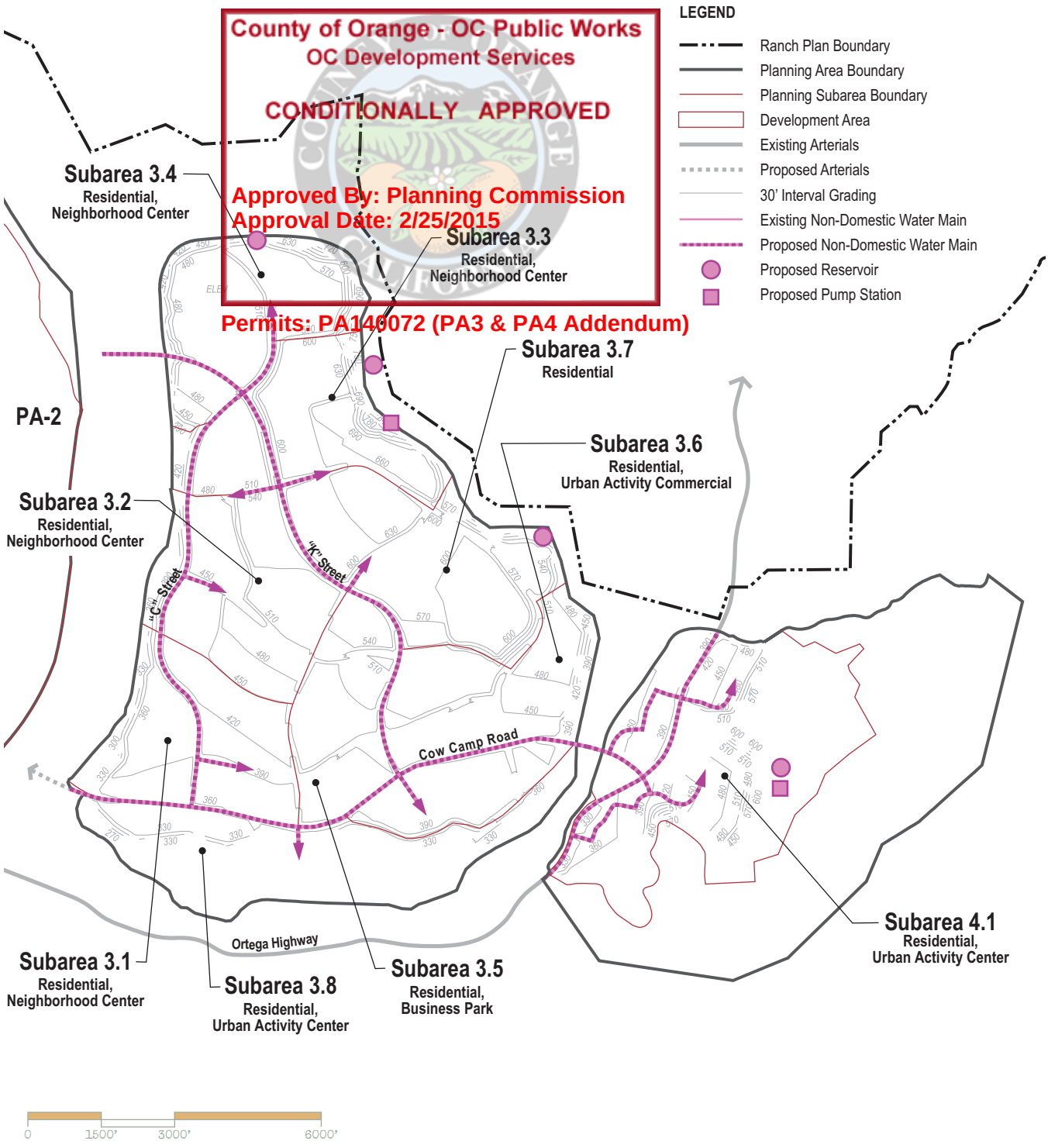

Source: RMV 2014

Conceptual Non-Domestic Water System

Exhibit 6

Planning Areas 3 and 4 Master and Subarea Plans

BonTerra PSOMAS

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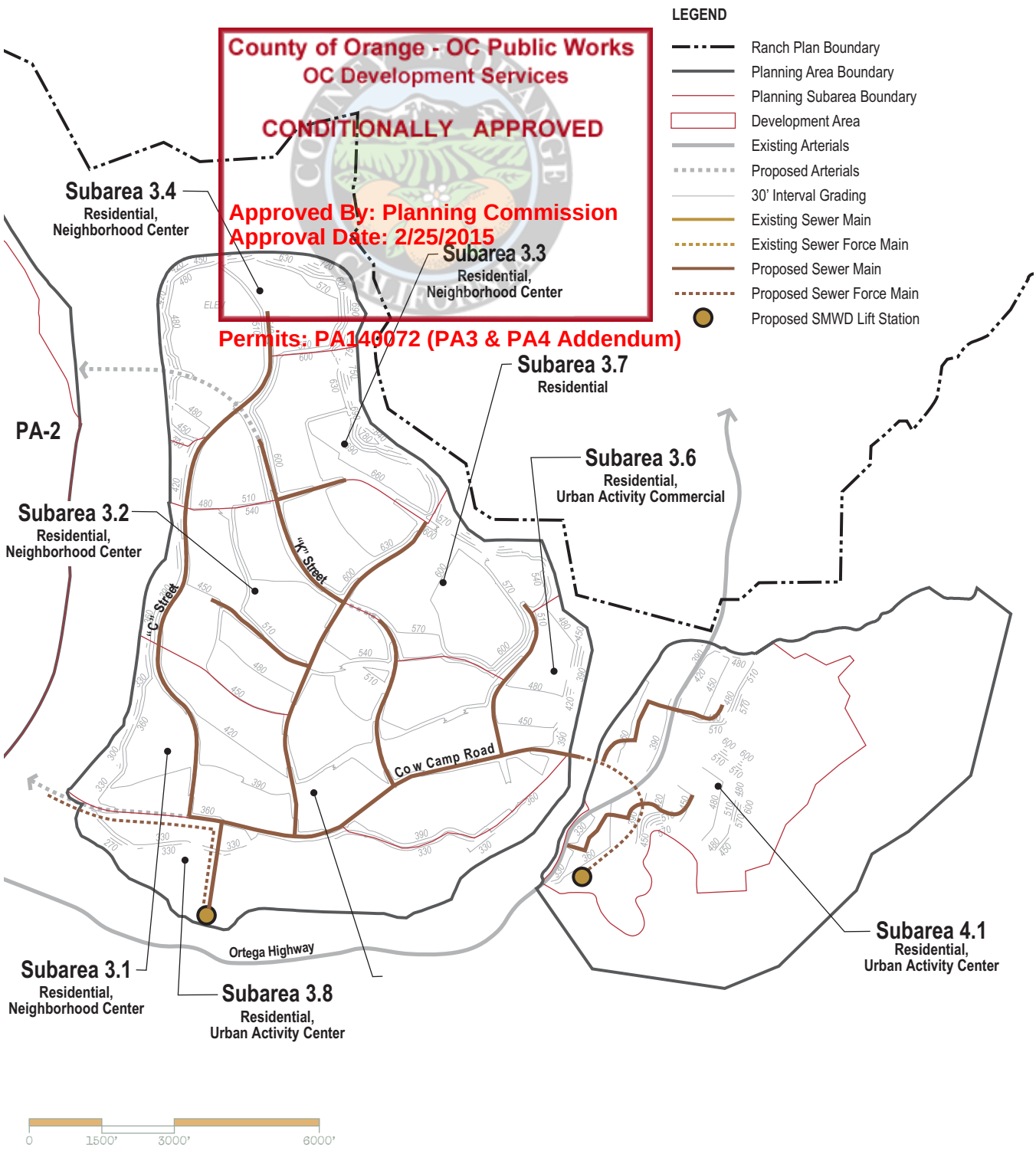

Source: RMV 2014

Preliminary Wastewater System

Exhibit 7

Planning Areas 3 and 4 Master and Subarea Plans

(01/21/15 JAZ) R:\Projects\RMV (RMV)\3RMV002600\Graphics\Addendum\ex7_prelimWW.pdf

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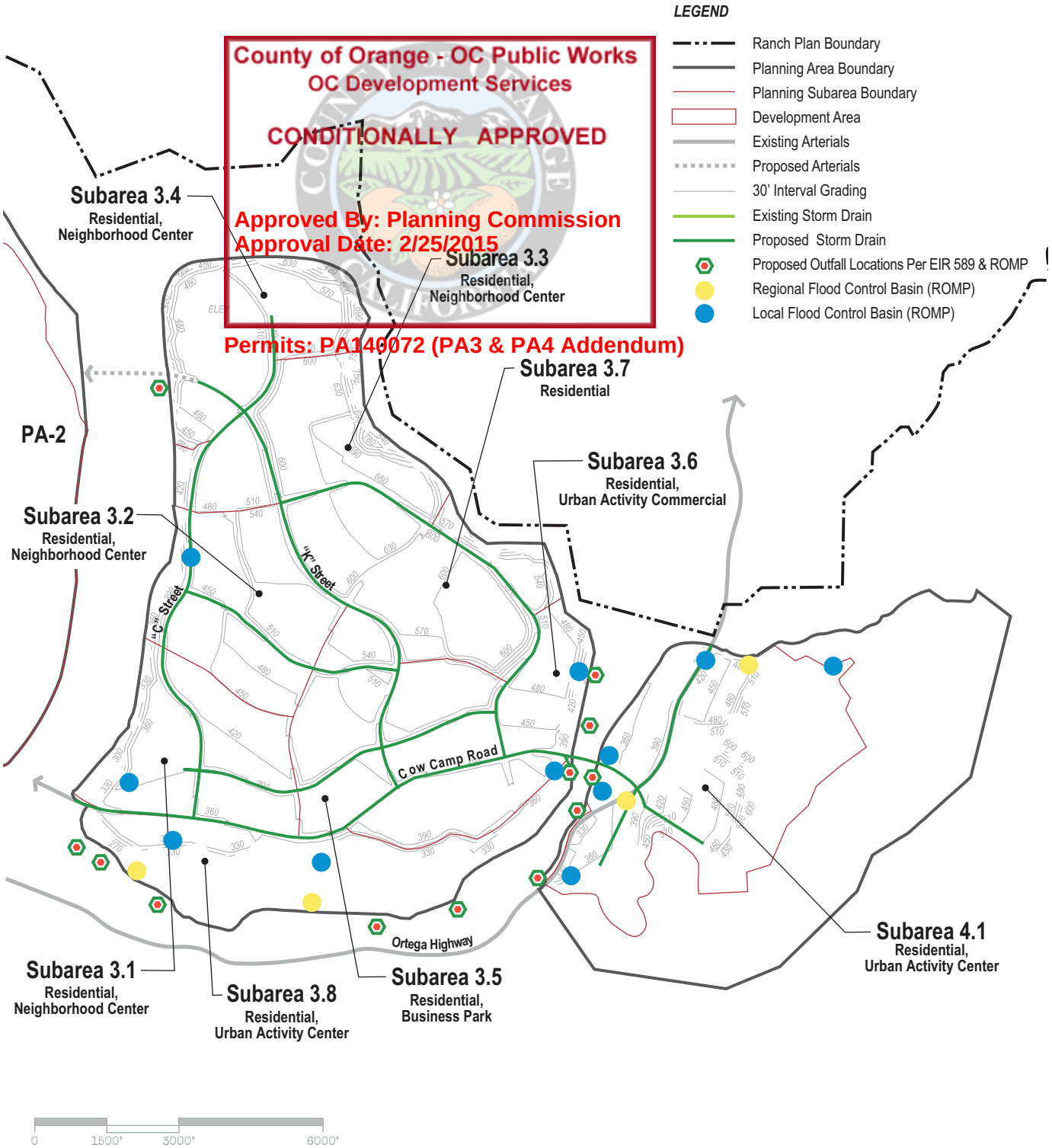

Source: RMV 2014

Preliminary Storm Drainage System

Exhibit 8

Planning Areas 3 and 4 Master and Subarea Plans

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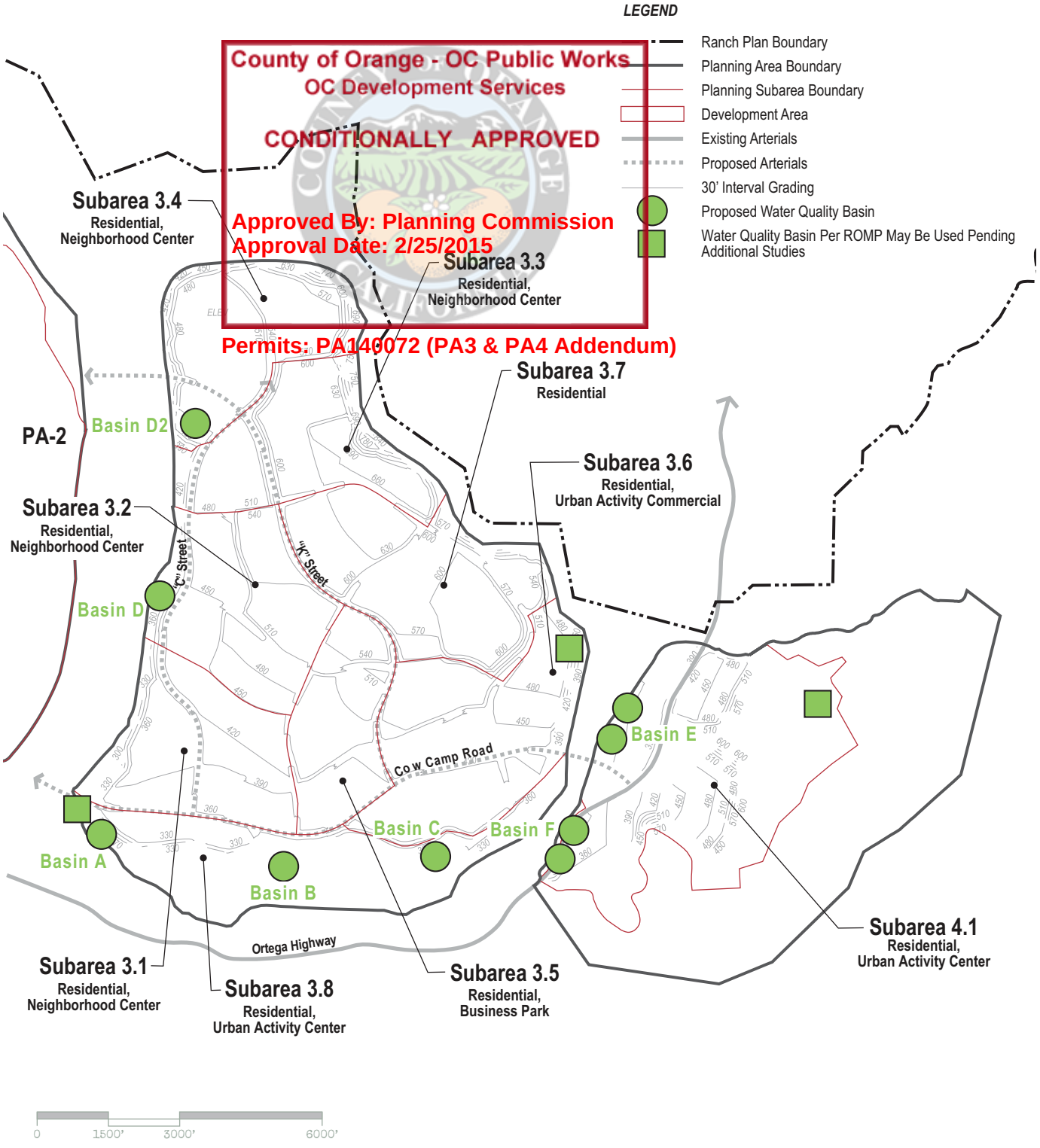

Source: RMV 2014

Preliminary Water Quality System

Exhibit 9

Planning Areas 3 and 4 Master and Subarea Plans

BonTerra PSOMAS

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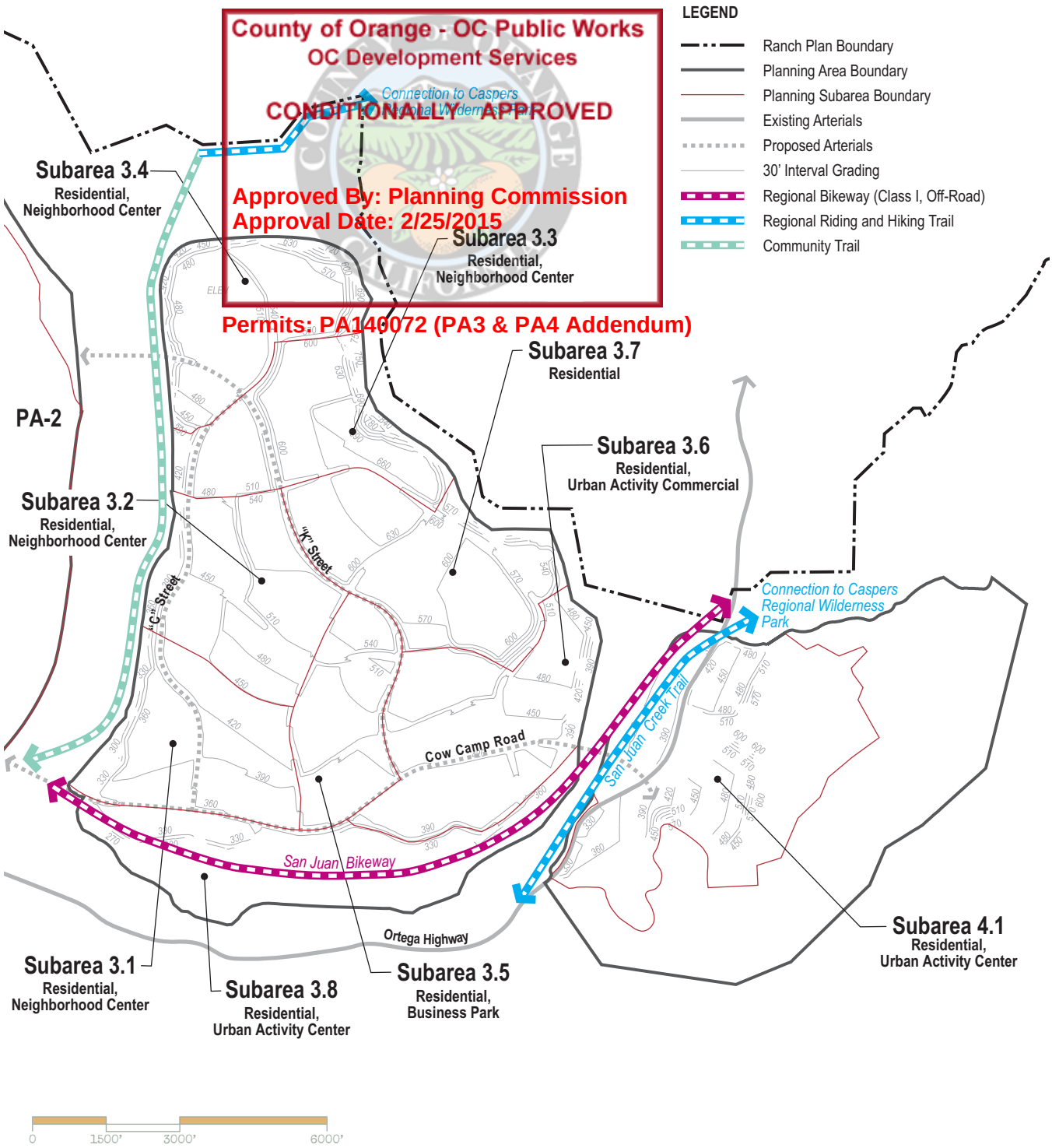

Source: RMV 2014

Trails and Bikeways Concept

Exhibit 10a

Planning Areas 3 and 4 Master and Subarea Plans

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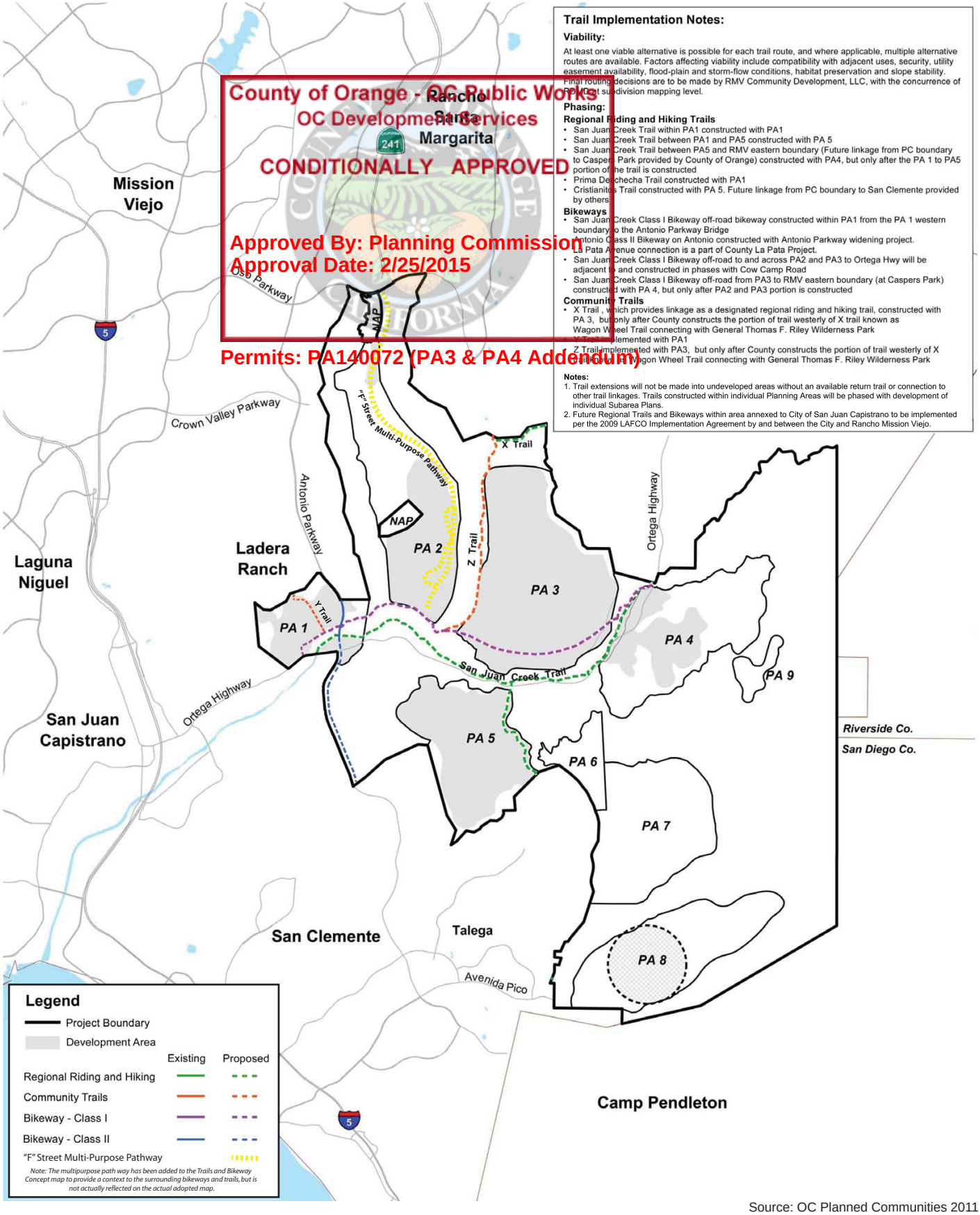

Source: OC Planned Communities 2011

Trails and Bikeways Concept

Exhibit 10b

Planning Areas 3 and 4 Master and Subarea Plans

BonTerra PSOMAS

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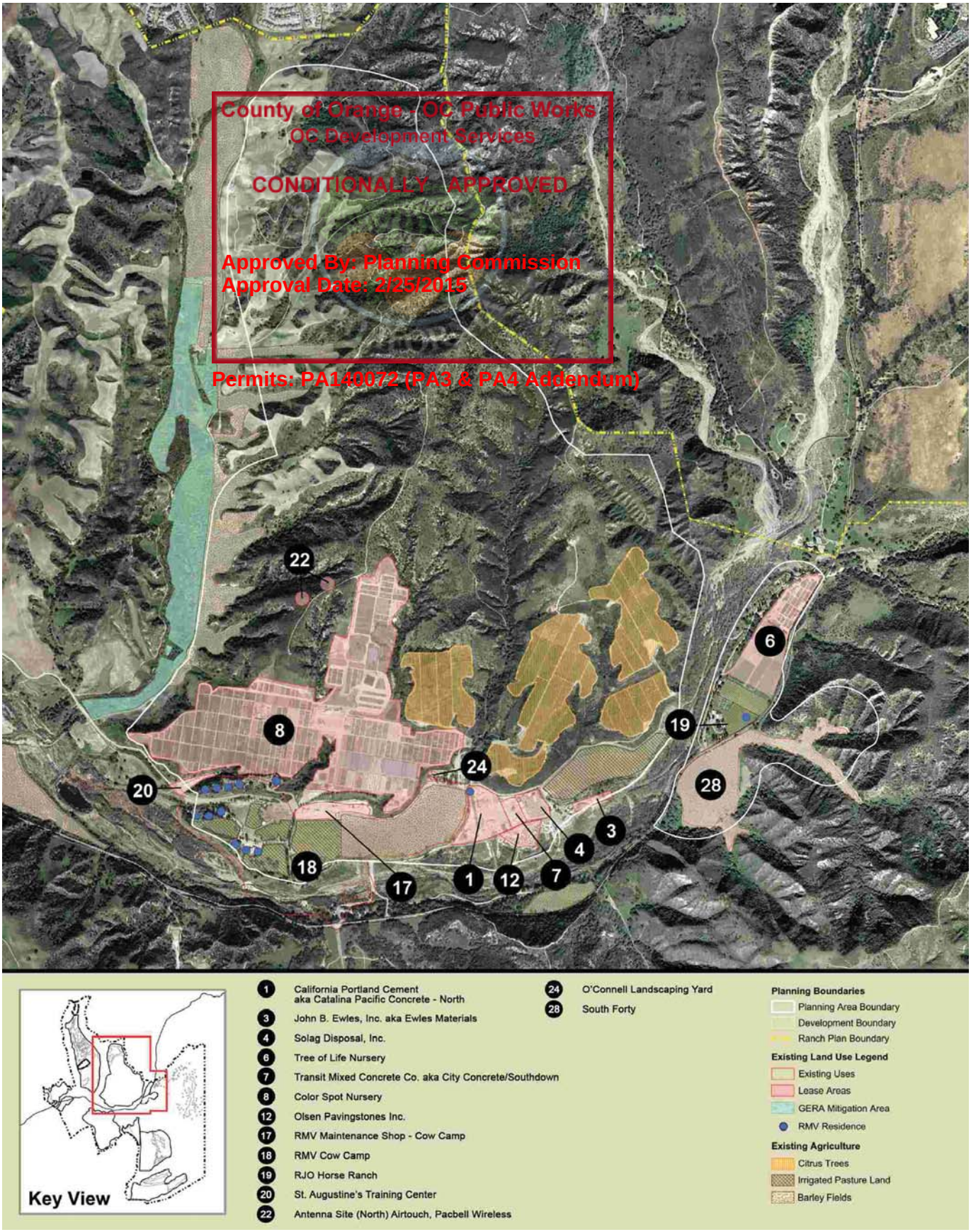

Source: RMV 2014

Agricultural and Other Existing Ongoing Uses

Exhibit 11

Planning Areas 3 and 4 Master and Subarea Plans

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TABLE 3
PLANNING AREAS 3 AND 4 DEVELOPMENT TABLE

Planning Area	Development Uses													Open Space Use	Planning Area Totals
	Residential					Urban Activity Center (UAC)		Neighbor-hood Center		Business Park		Golf Resort Gross Acreage	Total Gross Acres		
	Gross Acres	Net Acres	Maximum Dwelling Units	Age-Qualified Dwelling Units	Parkland Gross Acres	Gross Acres	Maximum Square Footage of Non-Residential Uses (in thousands)	Gross Acres	Maximum Square Footage (in thousands)	Gross Acres	Maximum Square Footage (in thousands)			Open Space Acres	Gross Acres
Planning Areas 3 and 4	**2,416**	**1,450**	**7,500**	**2,919**	**100**	**201**	**2,950**	**19**	**145**	**50**	**305**	**0**	**2,686**	**627**	**3,313**
Subarea 3.1	254	165	962	390	5			3	15				257		
Subarea 3.2	266	172	1,154	468	5			3	15				269		
Subarea 3.3	249	143	1,001	406	5			3	15				252		
Subarea 3.4	242	150	881	357	5			10	100				252		
Subarea 3.5	128	67	700	284	5					50	305		178		
Subarea 3.6	282	154	1,171	515	20	53	750						335		
Subarea 3.7	319	207	1,131	499	5								319		
Subarea 3.8	274				50	35	500						309		
Subarea 4.1	402	392	500			113	1,700						515		

Source: Draft Master Area Plan for Planning Areas 3 and 4 and Subarea Plans, 2014

3.3.2 SUBAREA PLANS

As previously noted, the Master Area Plan may divide the planning area into subareas. The Subarea Plans provide a more detailed level of planning on the key features of the development proposed in a subarea. This would include, but not be limited to (1) the specific residential and non-residential development use locations, densities, and categories; (2) locations and acreages of park, recreation, and other open space uses; (3) circulation features; (4) ten-foot contour grading plans; and (5) community facility locations. The full requirements of Subarea Plans are identified in *the Ranch Plan Planned Community Program Text*. Eight subareas are proposed for Planning Area 3, Subareas 3.1 through 3.8, and all eight Subarea Plans are evaluated in this Addendum.

Exhibits 12 through 20 depict the subareas in Planning Areas 3 and 4. The preliminary grading concept for each subarea is depicted in ten-foot contour intervals on these respective exhibits. The following provides a general description of the proposed uses in each subarea.

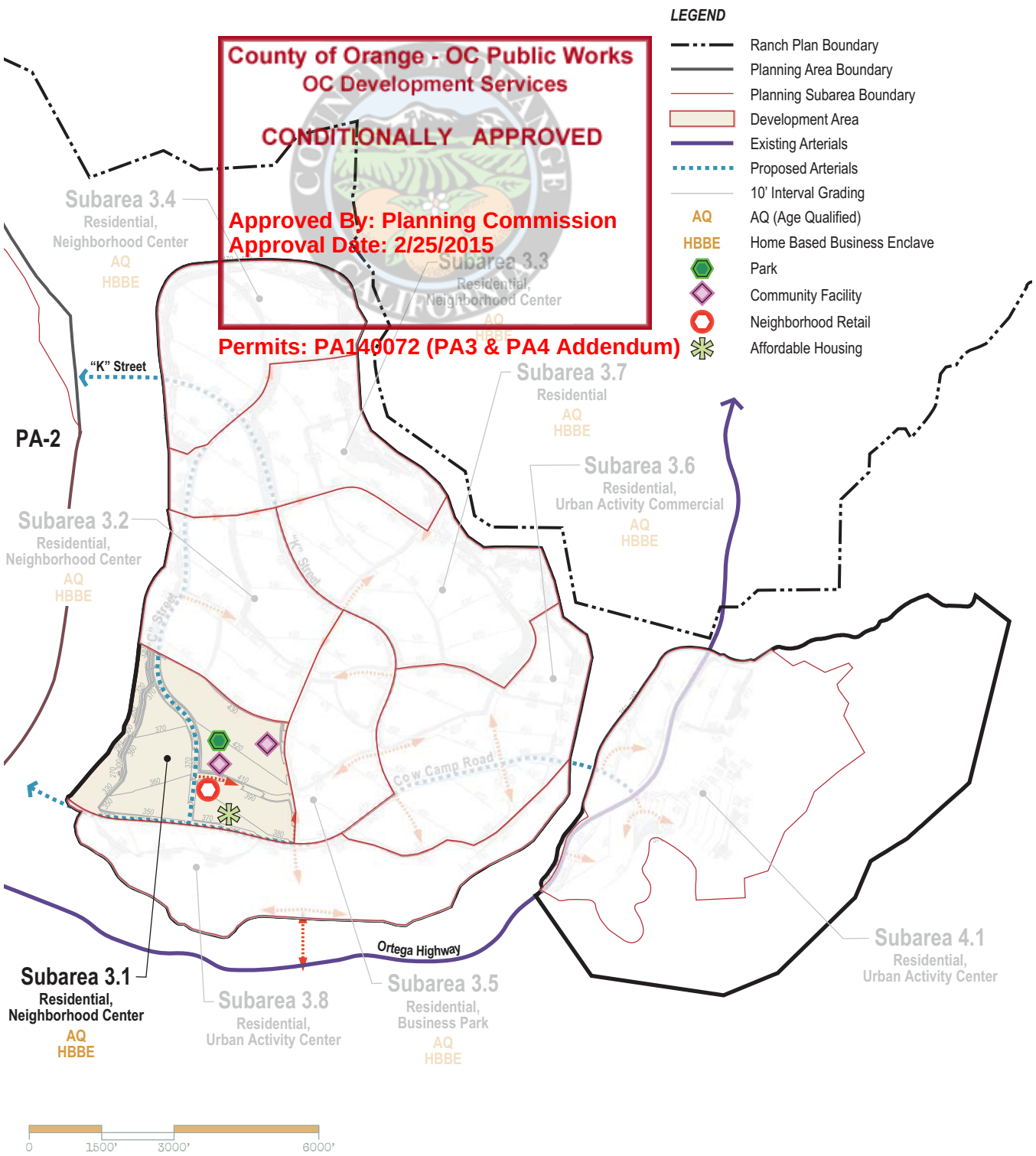
Subarea 3.1

The 257-gross-acre Subarea 3.1 is located in the southwesterly portion of Planning Area 3. Cow Camp Road would traverse the southerly boundary of the subarea in a generally east-west direction. Cañada Gobernadora is located westerly of Subarea 3.1. Exhibit 12 depicts the conceptual land use and conceptual grading plans for Subarea 3.1. The following land uses are proposed:

- Residential development on 254 gross acres, allowing a total of 962 dwelling units, including 390 age-qualified units. This residential area may also include, but not be limited to, to the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*:
  - A potential affordable housing site of up to three-gross-acres, in compliance with the Affordable Housing Implementation Agreement (AHIA)[8].
  - Up to 12 acres of community facility uses (including, but not limited to, a potential Kindergarten through 8th grade [K–8] school and a day care center).
  - A potential Home Based Business Enclave (HBBE)[9].
  - Private recreational uses, including but not limited to, clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails; the Master Maintenance Corporation owned and operated community facilities may allow the

[8] An AHIA was approved in conjunction with the Ranch Plan Development Agreement. The AHIA generally requires RMV to provide the County with parcels ranging in size from 2 to 10 acres, for a total of 60 acres, for rental units for low and very-low income households. In December 2013, the County amended the AHIA to allow an option of allowing private sector financing to provide the affordable units on in the Rancho Mission Viejo Planned Community. In exchange for the financial benefits to the County, under the private sector approach, RMV would get a credit equal to the actual gross acreage of the housing site(s) subject to the ground lease multiplied by a factor of two (for example, a five gross acre parcel that is developed under this approach would receive a Dedicated Land Credit of ten gross acres). Currently, there are two sites (one each in Planning Areas 1 and 2 being developed with private financing.

[9] The *Ranch Plan Planned Community Program Text* provides for the development and maintenance of neighborhoods that allow opportunities for small, entrepreneurial business owners to operate out of their homes, or in facilities on the same lot as their homes. The *Ranch Plan Planned Community Program Text* outlines the type of business allowed and prohibited in this category. The locations where this land use is allowed are depicted on the Subarea Plans.



Source: RMV 2015

Planning Subarea 3.1

Exhibit 12

Planning Areas 3 and 4 Master and Subarea Plans

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BonTerra PSOMAS

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service of alcohol and construction of a 60-foot tall, 30-foot wide by 30-foot wide architectural feature that may also include wireless facilities.

  - Up to five acres of public parkland.

- Up to 3 acres and up to 15,000 square-feet of uses allowed by Section III.C.1.a (Neighborhood Center – Principal Permitted Uses) of the *Ranch Plan Planned Community Program Text*.

Subarea 3.2

The 269-gross-acre Subarea 3.2 is located in the middle of the westerly portion of Planning Area 3. "C" Street would traverse the westerly portion of the subarea and "K" Street would traverse the easterly boundary of the subarea, both in a north-south direction. Cañada Gobernadora is located westerly of Subarea 3.2. Exhibit 13 depicts the conceptual land use and conceptual grading plans for Subarea 3.2. The following land uses are proposed:

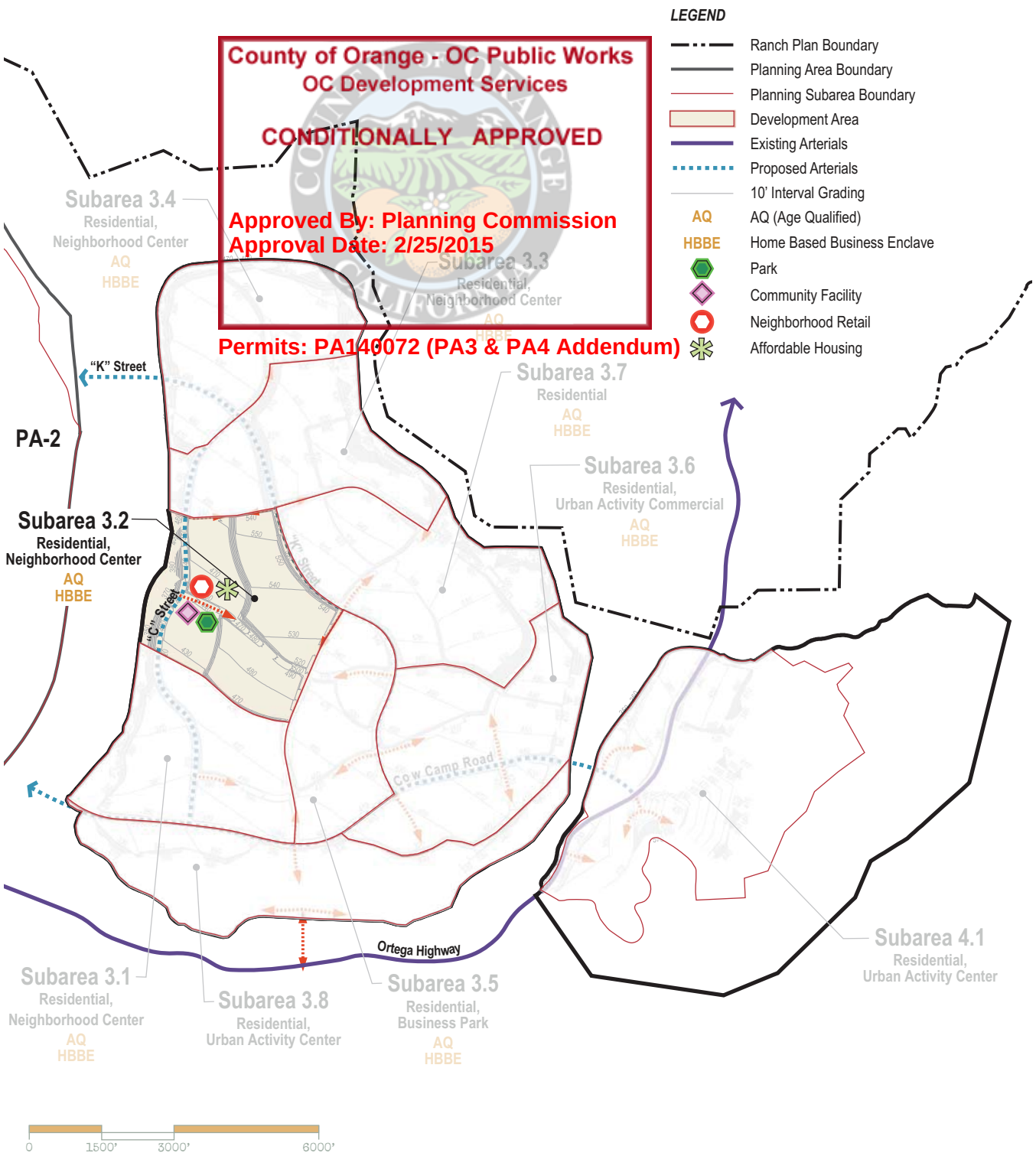
- Residential development on 266 gross acres, allowing a total of up to 1,154 dwelling units, including approximately 468 age-qualified units. This residential area may also include, but not be limited to, the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*.
  - A potential affordable housing site of up to six-gross-acres in compliance with the AHIA.
  - A potential HBBE.
  - Private recreational uses, including but not limited to, clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails; the Master Maintenance Corporation owned and operated community facilities may allow the service of alcohol and construction of a 60-foot tall, 30-foot wide by 30-foot wide architectural feature that may also include wireless facilities.
  - Up to five acres of public parkland.

- Up to 3 acres and up to 15,000 square-feet of uses allowed by Section III.C.1.a (Neighborhood Center – Principal Permitted Uses) of the *Ranch Plan Planned Community Program Text.*

Subarea 3.3

The 252-gross-acre Subarea 3.3 is located in the north-central portion of Planning Area 3. "C" Street would traverse the westerly boundary of the subarea in a generally north-south direction and "K" Street would traverse the middle of the subarea. Cañada Gobernadora is located to the west and Caspers Wilderness Park is located to the east of Subarea 3.3. Exhibit 14 depicts the conceptual land use and conceptual grading plans for Subarea 3.3. The following land uses are proposed:

- Residential development on 249 gross acres, allowing a total of up to 1,001 dwelling units, including approximately 406 age-qualified units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*:
  - A potential affordable housing site of up to six-gross-acres in compliance with the AHIA.
  - A potential HBBE.



Source: RMV 2015

Planning Subarea 3.2

Exhibit 13

Planning Areas 3 and 4 Master and Subarea Plans

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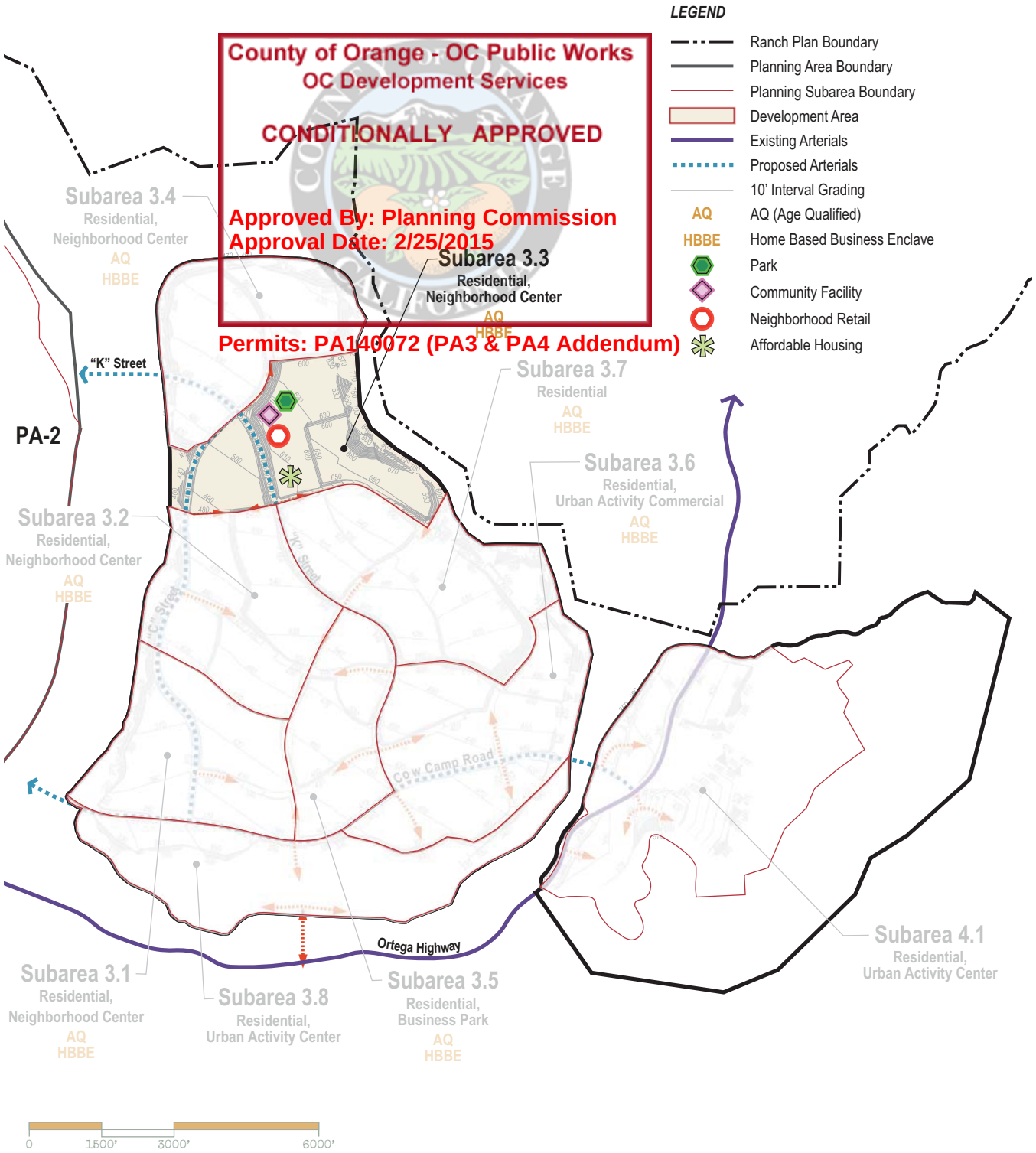

Source: RMV 2015

Planning Subarea 3.3

Exhibit 14

Planning Areas 3 and 4 Master and Subarea Plans

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- Up to two acres of community facility uses (including, but not limited to a potential fire station and a day care center).
- Private recreational uses, including but not limited to, clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails; the Master Maintenance Corporation owned and operated community facilities may allow the service of alcohol and construction of a 60-foot tall, 30-foot wide by 30-foot wide architectural feature that may also include wireless facilities.
- Up to five acres of public parkland.

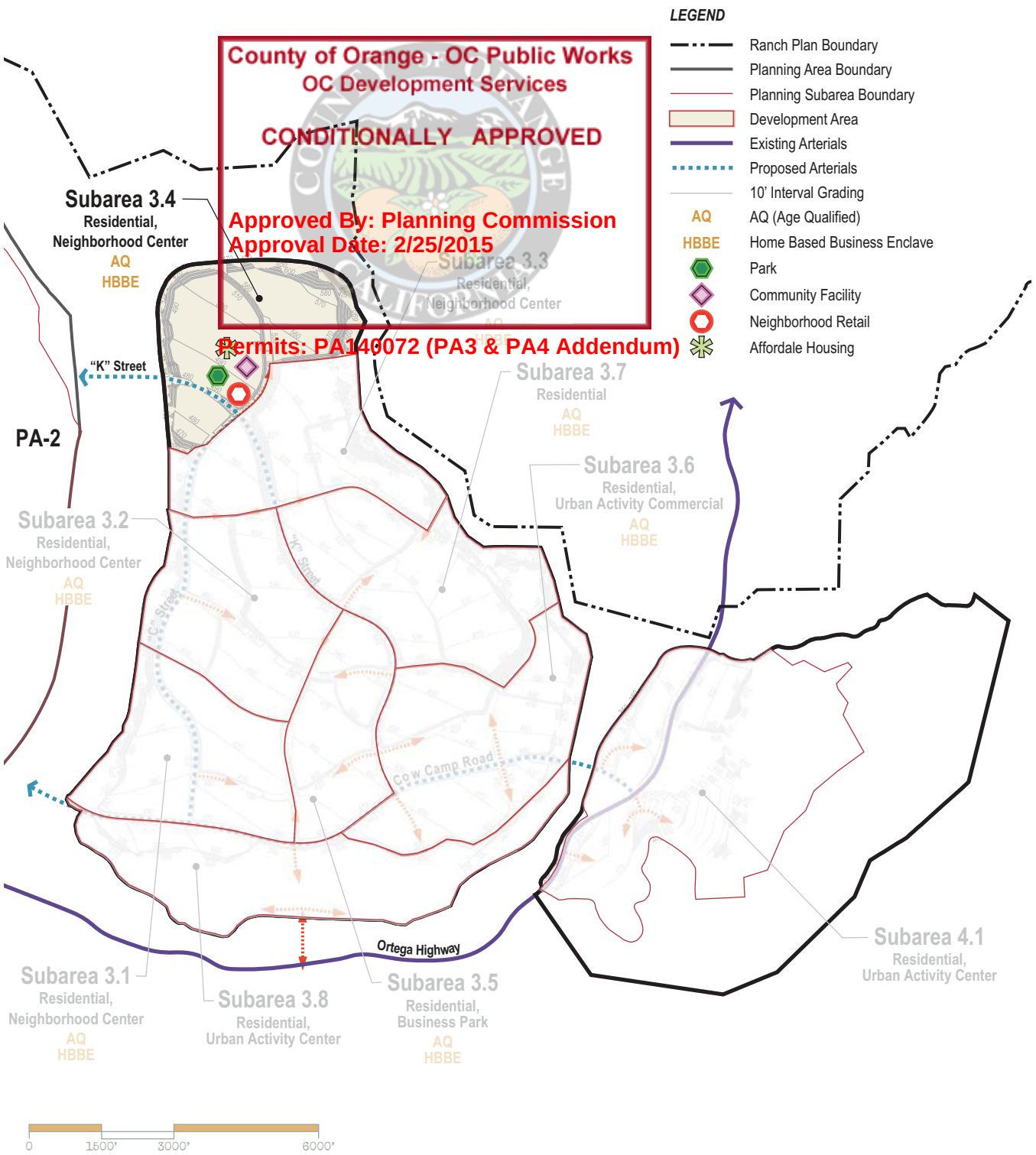
- Up to 3 acres and up to 15,000 square-feet of uses allowed by Section III.C.1.a (Neighborhood Center – Principal Permitted Uses) of the *Ranch Plan Planned Community Program Text*.

Subarea 3.4

The 252-gross-acre Subarea 3.4 is located in the northerly portion of Planning Area 3. "K" Street would traverse the southwesterly portion of the subarea, in a generally east-west direction Cañada Gobernadora is located to the west, Gobernadora Multi-Purpose Basin is located to the northwest, Coto de Caza is located to the north, and Caspers Wilderness Park is located east of Subarea 3.4. Exhibit 15 depicts the conceptual land use and conceptual grading plans for Subarea 3.4. The following land uses are proposed:

- Residential development on 242 gross acres, allowing a total of up to 881 dwelling units, including approximately 357 age-qualified units. This residential area may also include, but not be limited to, the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*:
  - A potential affordable housing site of up to three-gross-acres in compliance with the AHIA.
  - A potential HBBE.
  - Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails; the Master Maintenance Corporation owned and operated community facilities may allow the service of alcohol and construction of a 60-foot tall, 30-foot wide by 30-foot wide architectural feature that may also include wireless facilities.
  - Up to five acres of public parkland.

- Up to 10 acres and up to 100,000 square feet of uses allowed by Section III.C.1.a (Neighborhood Center – Principal Permitted Uses) of the *Ranch Plan Planned Community Program Text*.



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Source: RMV 2015

Planning Subarea 3.4

Exhibit 15

Planning Areas 3 and 4 Master and Subarea Plans

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Subarea 3.5

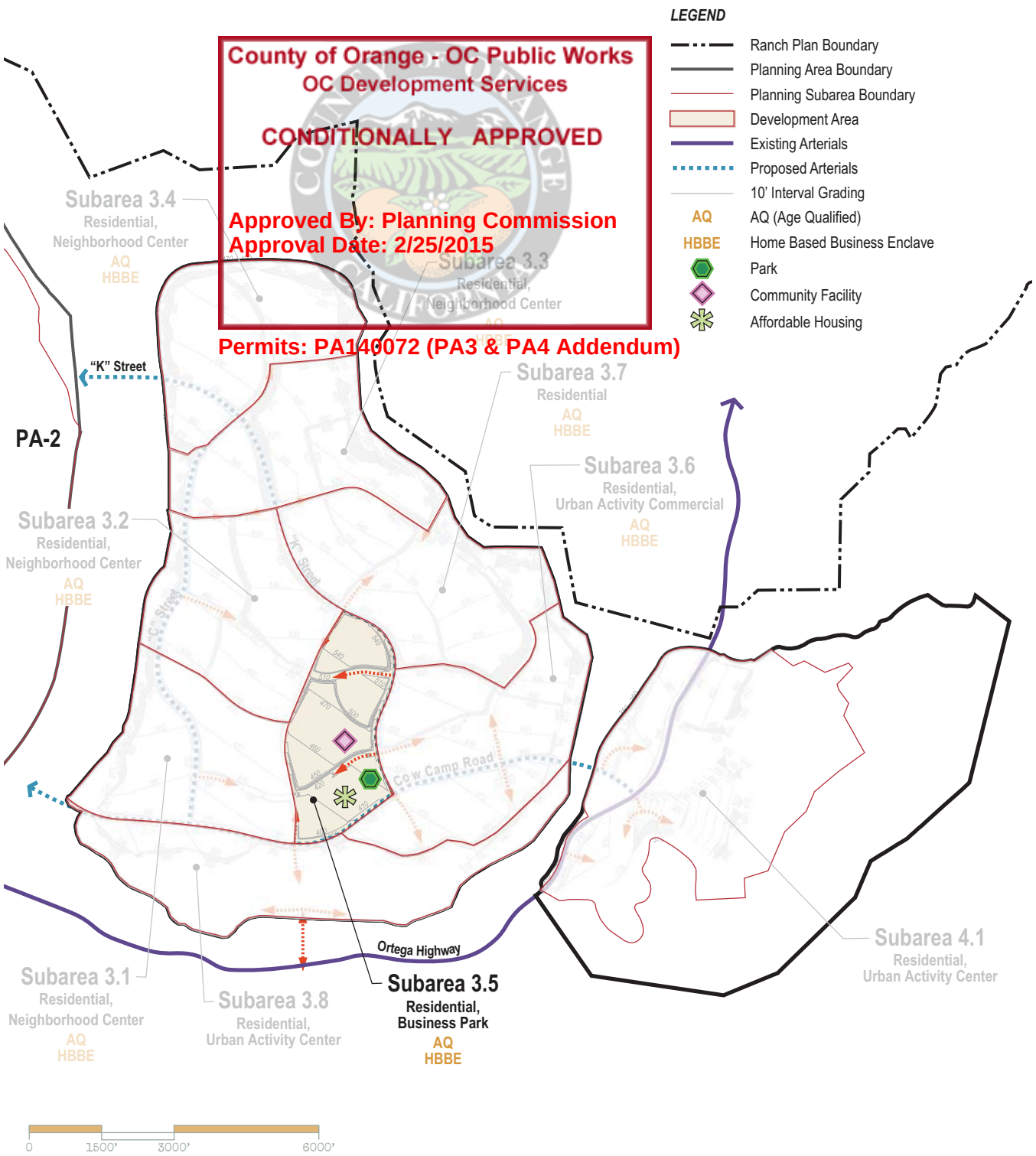
The 178-gross-acre Subarea 3.5 is located in the central portion of Planning Area 3. Cow Camp Road would traverse the southerly boundary of the subarea in a generally east-west direction, and "K" Street would traverse the easterly boundary of the subarea in a generally north-south direction. Subarea 3.5 is surrounded by Subarea 3.1 to the west, Subarea 3.2 to the northwest, Subarea 3.7 to the northeast, Subarea 3.6 to the east, and Subarea 3.8 to the south. Exhibit 16 depicts the conceptual land use and conceptual grading plans for Subarea 3.5. The following land uses are proposed:

- Residential development on 128 gross acres, allowing a total of up to 700 dwelling units, including approximately 284 age-qualified units. This residential area may also include, but not be limited to, the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*:
  - A potential six-gross-acre affordable housing site in compliance with the AHIA.
  - A potential HBBE.
  - Private recreational uses, including but not limited to, clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails; the Master Maintenance Corporation owned and operated community facilities may allow the service of alcohol and construction of a 60-foot tall, 30-foot wide by 30-foot wide architectural feature that may also include wireless facilities.
  - Up to 20 acres of community facilities (including, but not limited to potential community center, a church, a fire station, and a library).
  - Up to five acres of public parkland.
- Up to 50 acres and up to 305,000 square-feet of uses allowed by Section III.E.1.a (Business Park – Principal Permitted Uses) of the *Ranch Plan Planned Community Program Text*.

Subarea 3.6

The 335-gross-acre Subarea 3.6 is located in the southeasterly portion of Planning Area 3. Cow Camp Road would traverse the middle of the subarea in a generally east-west direction. San Juan Creek and Planning Area 4 are located east of Subarea 3.6. Exhibit 17 depicts the conceptual land use and conceptual grading plans for Subarea 3.6. The following land uses are proposed:

- Residential development on 282 gross acres, allowing a total of up to 1,171 dwelling units, including approximately 515 age-qualified units. This residential area may also include, but not be limited to, the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*:
  - A potential six-gross-acre affordable housing site in compliance with the AHIA.
  - A potential HBBE.
  - Up to 17 acres of community facility uses (including, but not limited to a potential K–8 school site, a fire station and a day care center).
  - Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails; the Master Maintenance Corporation owned and operated community facilities may allow the



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Source: RMV 2015

Planning Subarea 3.5

Exhibit 16

Planning Areas 3 and 4 Master and Subarea Plans

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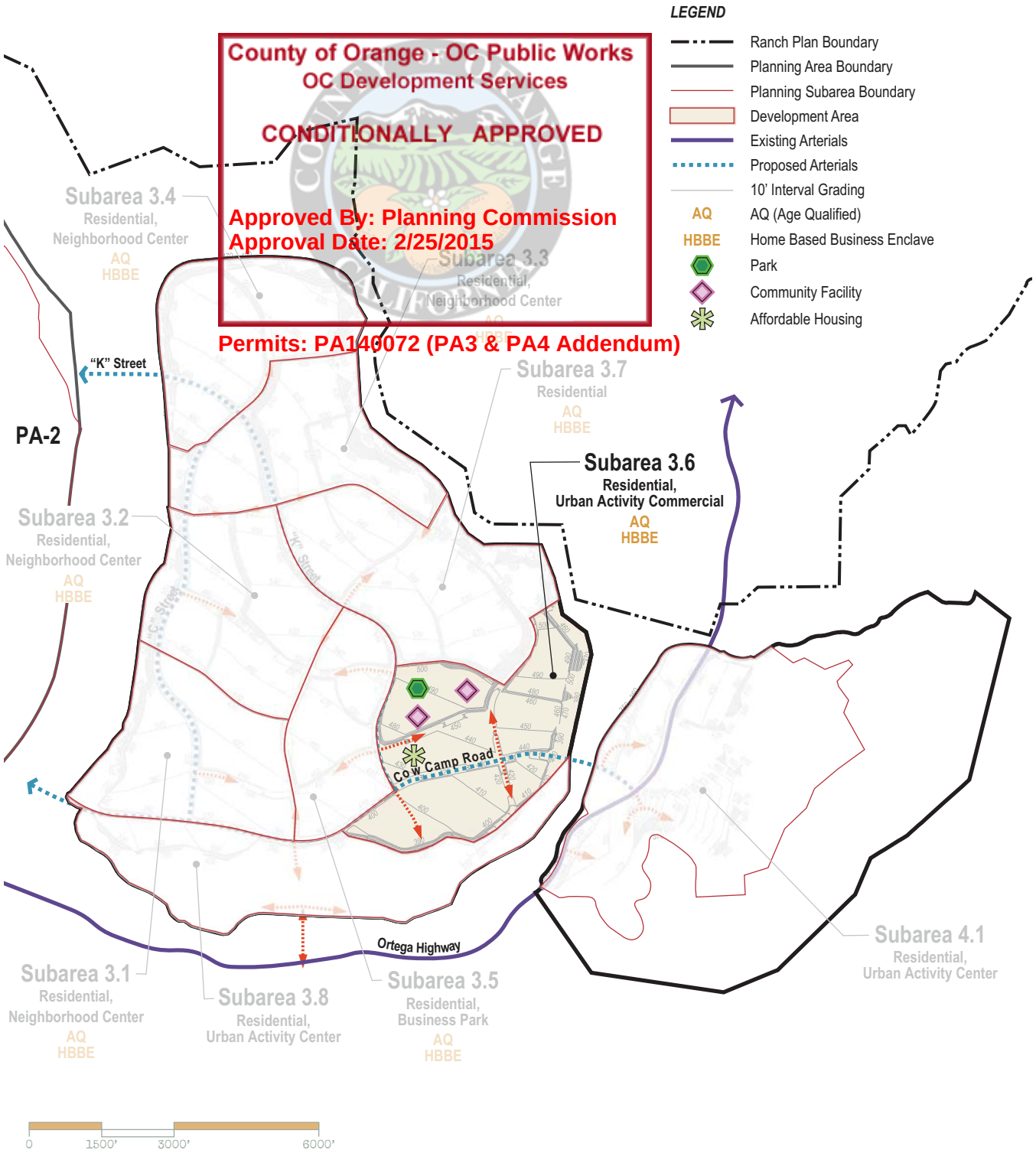

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Source: RMV 2015

Planning Subarea 3.6

Exhibit 17

Planning Areas 3 and 4 Master and Subarea Plans

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service of alcohol and construction of a 60-foot tall, 30-foot wide by 30-foot wide architectural feature that may also include wireless facilities.

  - Up to 20 acres of public parkland.

- Up to 53 acres and up to 750,000 square feet of uses permitted by Section III.D.1.a (Urban Activity Center – Principal Permitted Uses) of the *Ranch Plan Planned Community Program Text*.

Subarea 3.7

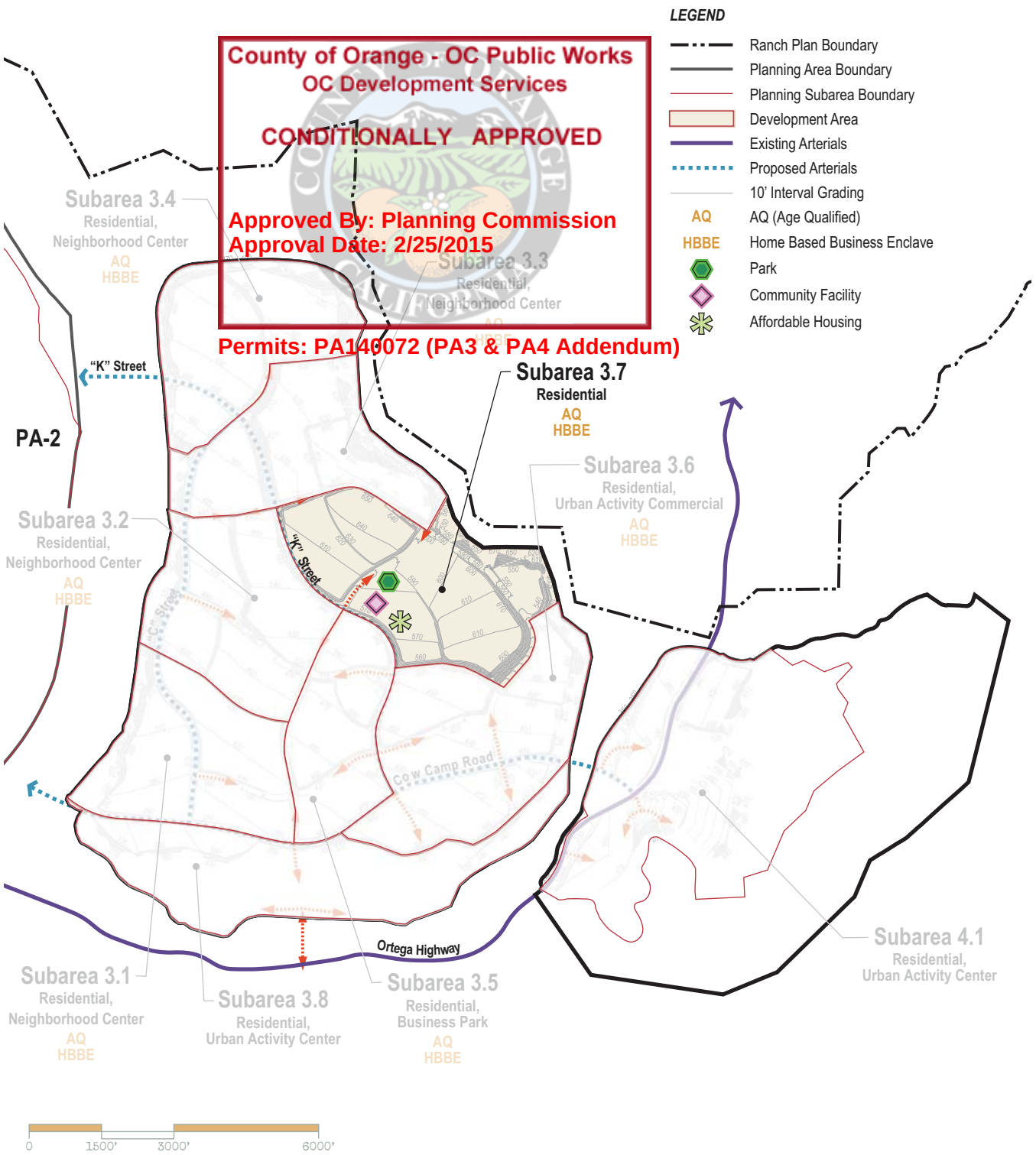
The 319-gross-acre Subarea 3.7 is located in the east-central portion of Planning Area 3. "K" Street would traverse the westerly boundary of the subarea in a generally north-south direction. Caspers Wilderness Park is located easterly of Subarea 3.7. Exhibit 18 depicts the conceptual land use and conceptual grading plans for Subarea 3.7. The following land uses are proposed:

- Residential development on 319 gross acres, allowing a total of up to 1,131 dwelling units, including approximately 499 age-qualified units. This residential area may also include, but not be limited to, the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*:
  - A potential affordable housing site of up to six-gross-acres in compliance with the AHIA.
  - A potential HBBE.
  - Up to three acres of community facility use (including, but not limited to a potential church).
  - Private recreational uses, including but not limited to, clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails; the Master Maintenance Corporation owned and operated community facilities may allow the service of alcohol and construction of a 60-foot tall, 30-foot wide by 30-foot wide architectural feature that may also include wireless facilities.
  - Up to five acres of public parkland.

Subarea 3.8

The 309-gross-acre Subarea 3.8 is located in the southerly portion of Planning Area 3. Cow Camp Road would traverse the northern boundary of the westerly portion of the subarea in a generally an east-west direction. San Juan Creek is located southerly of Subarea 3.8. Exhibit 19 depicts the conceptual land use and conceptual grading plans for Subarea 3.8. The following land uses are proposed:

- A development area that is 274 gross acres and will be developed predominately with residential uses, which may include, but not be limited to, the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*:
  - Up to 50 acres of proposed sports park uses.
  - Approximately 80 acres of detention basins and water quality basins, as allowed by Section III.F.1.1.1(b) (Community Facilities) of the *Ranch Plan Planned Community Program Text*.
  - Approximately 75 acres of uses allowed by Section III.H, Agricultural and Other Existing and On-Going Uses, of the *Ranch Plan Planned Community Text* (including



Source: RMV 2015

Planning Subarea 3.7

Exhibit 18

Planning Areas 3 and 4 Master and Subarea Plans

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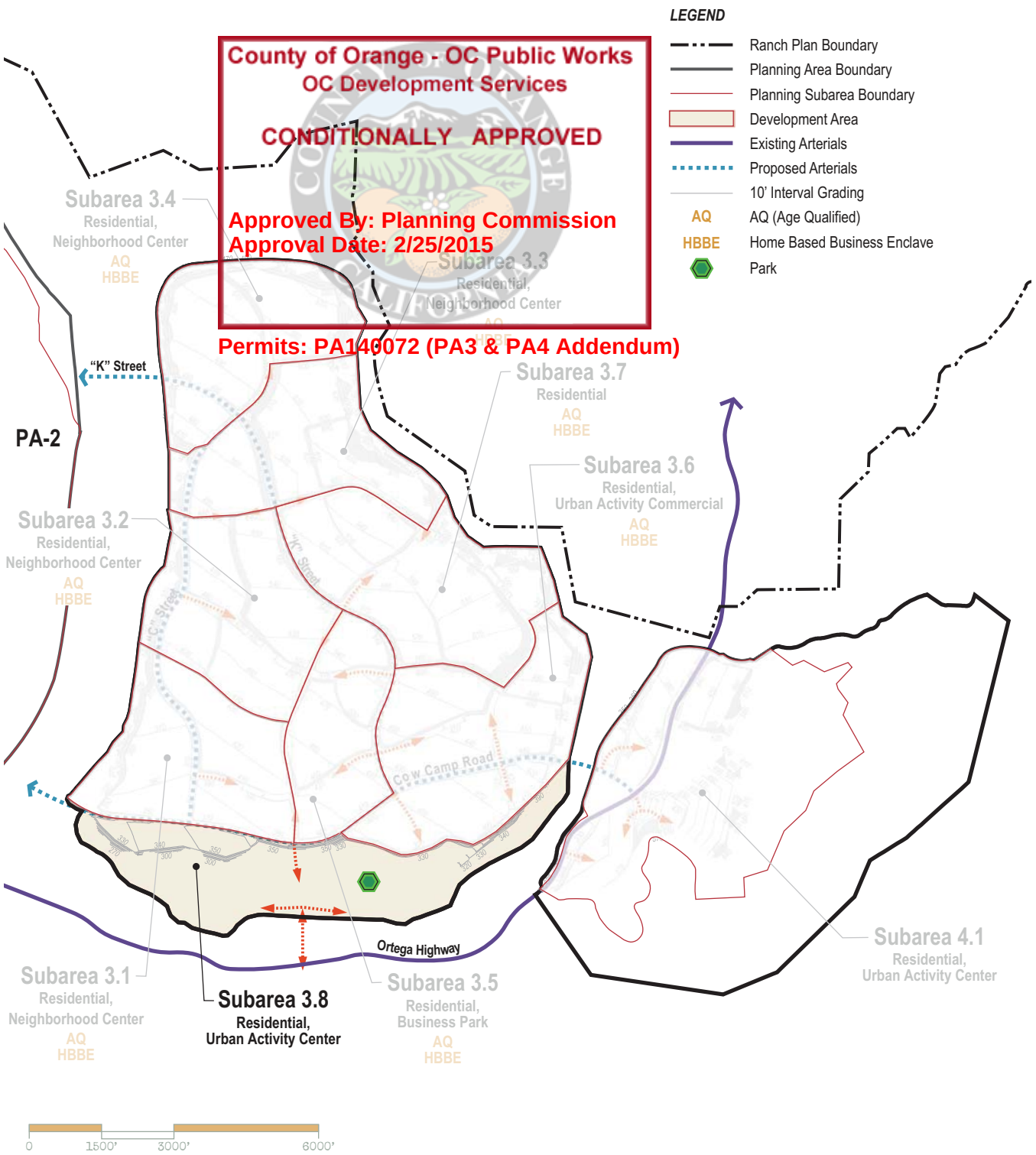

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Source: RMV 2015

Planning Subarea 3.8

Exhibit 19

Planning Areas 3 and 4 Master and Subarea Plans

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but not limited to Item III.H.2.d, "Ranching facilities also used periodically for recreational purposes (including "Cow Camp" at 31471 Ortega Highway)".

- Up to 35 acres and up to 500,000-square-feet of uses permitted by Section III.D.1.a (Urban Activity Center – Principal Permitted Uses) of the *Ranch Plan Planned Community Program Text*.

Subarea 4.1

A single Subarea Plan is proposed for Planning Area 4, as shown on Exhibit 20. The 1,127 acre Planning Area includes 515-gross acres of development use. Subarea 4.1 is the only subarea proposed in Planning Area 4. Ortega Highway would traverse the westerly portion of the subarea in a generally east-west direction. San Juan Creek is located northwesterly of Subarea 4.1. Exhibit 20 depicts the conceptual land use and conceptual grading plans for Subarea 4.1. The following land uses are proposed:

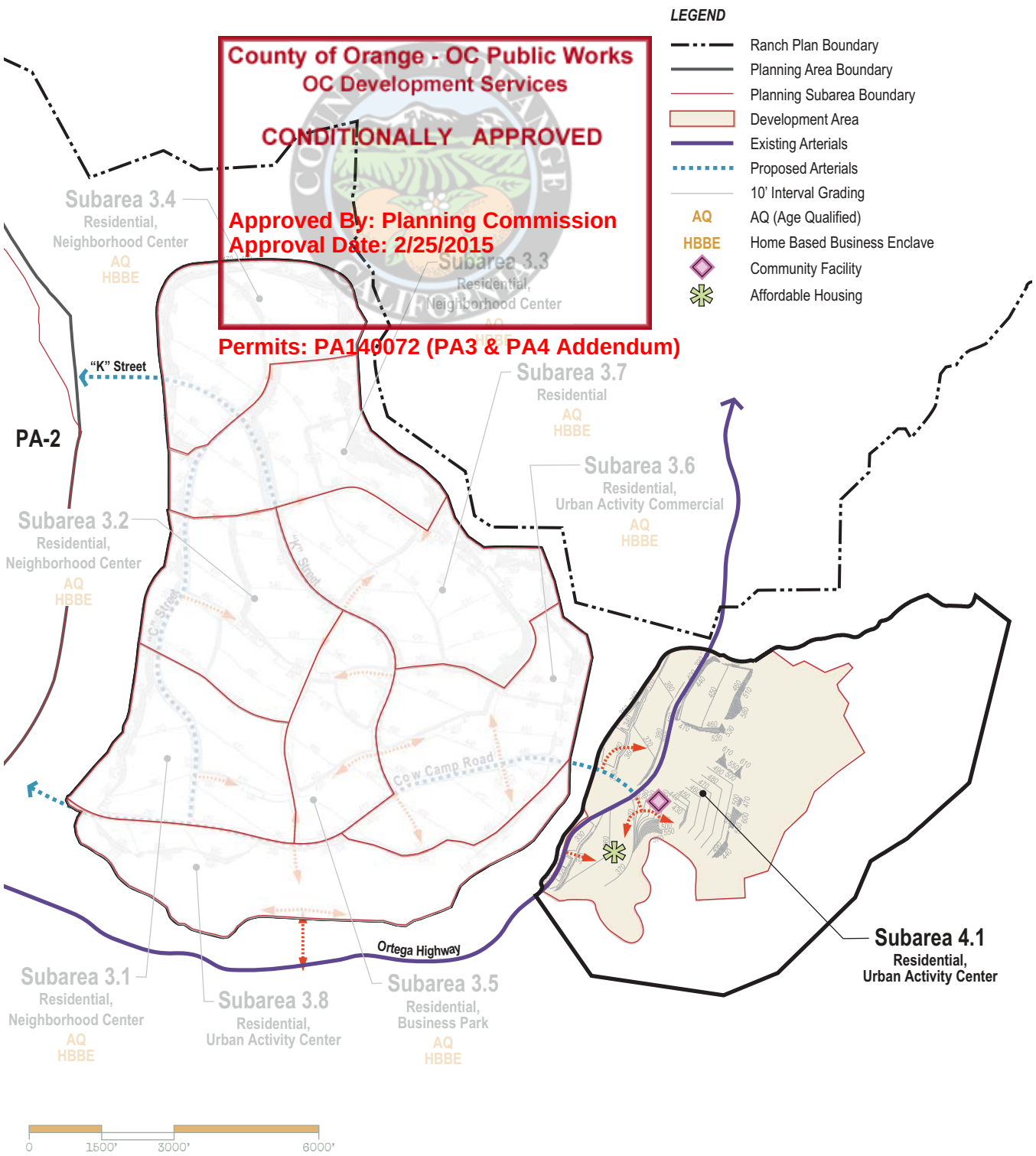
- Residential development on 402 gross acres, allowing a total of up to 500 dwelling units. This residential area may also include, but not be limited to, the following uses allowed by Section III.A (Residential) of the *Ranch Plan Planned Community Program Text*:
  - A potential affordable housing site of up to three-gross-acres in compliance with the AHIA.
  - A potential HBBE.
  - Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails; the Master Maintenance Corporation owned and operated community facilities may allow the service of alcohol and construction of a 60-foot tall, 30-foot wide by 30-foot wide architectural feature that may also include wireless facilities.
- Up to 113 acres and up to 1,700,000 square feet of uses permitted by Section III.D.1.a (Urban Activity Center – Principal Permitted Uses) of the *Ranch Plan Planned Community Program Text*.
- The remaining 612-acre undeveloped portion of the Subarea 4.1 would be in permanent open space, with other potential uses, including but not limited to, a future reservoir and Agricultural and Other Existing and On-Going Uses allowed by the *Ranch Plan Planned Community Program Text* Section III.H.2.d.[10]

3.3.3 VESTING TENTATIVE TRACT MAPS

The California Subdivision Map Act, the *Orange County Subdivision Code*, and the *Orange County Subdivision Manual* regulate the processing and approval of vesting tentative tract maps. Two levels of tentative tract maps are generally submitted.

The first maps to be submitted are "A" maps, a term historically used in Orange County for a Tentative, Vesting Tentative, or a Final Tract Map prepared by a master developer as a first "parent map" subdividing master development lots, showing major infrastructure improvements, and providing general access to the master development. In general, "A" maps would refer to a master developer's division of land into large lots that will either be sold to neighborhood builders or will be developed by the master developer as rental housing, retail commercial, office and

[10] The reservoir was evaluated as a cumulative project. The SSHCP and the associated FEIR 584 evaluated the construction of a 175-acre reservoir for water storage within the open space area of Planning Area 4.



Source: RMV 2015

Planning Subarea 4.1

Exhibit 20

Planning Areas 3 and 4 Master and Subarea Plans

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industrial, or community facility uses. "A" maps create large super pads that identify infrastructure improvements, mass grading, and open space areas. These maps do not provide specific information regarding the number of future building sites, building plans and, elevations, or street configurations. Densities would comply with the density allowed in the Area Plans. Generally, "A" tentative tract maps are processed subsequent to, and covering the same area as Subarea Plans.

The subsequent maps submitted will be "B" maps, a term historically used in Orange County for a Tentative, Vesting Tentative, or a Final Tract Map that further subdivides master developer lots created by a parent "A" map and that results mostly in individual single or multi-family residential legal lots. In general, "B" maps would refer to a builder's subdivision, (further subdividing an "A" map). Rancho Mission Viejo will be selling "A" tentative tract mapped lots to neighborhood builders who will submit "B" maps that would identify building sites and provide more detail. It is anticipated that CEQA review for an "A" tentative tract map within the Rancho Mission Viejo Planned Community would also address each subsequent vesting "B" tentative tract map. At the time the "B" tentative tract maps are filed, the County would verify consistency with the information submitted with the "A" tentative tract map.

The following tentative tract numbers and associated numbered (buildable) lots are assumed in Planning Area 3:

Subarea 3.1, "A" Tentative Tract (TT) Map 17931

"B" TT 17931-01	Conventional Single-Family Detached Dwellings
"B" TT 17931-02	Conventional Single-Family Detached Dwellings
"B" TT 17931-03	Conventional Single-Family Detached Dwellings
"B" TT 17931-04	Conventional Single-Family Detached Dwellings
"B" TT 17931-05	Conventional Single-Family Detached Dwellings
"B" TT 17931-06	Conventional Single-Family Detached Dwellings
"B" TT 17931-07	Planned Concept Detached Dwellings
"B" TT 17931-08	Planned Concept Detached Dwellings
"B" TT 17931-09	Planned Concept Detached Dwellings
"B" TT 17931-10	Planned Concept Detached Dwellings
"B" TT 17931-11	Planned Concept Detached Dwellings
"B" TT 17931-12	Planned Concept Detached Dwellings
"B" TT 17931-13	Planned Concept Detached Dwellings
"B" TT 17931-14	Planned Concept Detached Dwellings
"B" TT 17931-15	Multi-Family Dwellings
"B" TT 17931-16	Multi-Family Dwellings
"B" TT 17931-17	Multi-Family Dwellings
"B" TT 17931-18	Multi-Family Dwellings (potential Affordable Housing Site)
Future Site Development Permits	Community Facilities (incl. potential Parks, Schools, Recreation Facilities and/or church)

Subarea 3.2, "A" Tentative Tract (TT) Map 17932

"B" TT 17932-01	Conventional Single-Family Detached Dwellings
"B" TT 17932-02	Conventional Single-Family Detached Dwellings
"B" TT 17932-03	Conventional Single-Family Detached Dwellings
"B" TT 17932-04	Conventional Single-Family Detached Dwellings

"B" TT 17932-05	Conventional Single-Family Detached Dwellings
"B" TT 17932-06	Conventional Single-Family Detached Dwellings
"B" TT 17932-07	Planned Concept Detached Dwellings
"B" TT 17932-08	Planned Concept Detached Dwellings
"B" TT 17932-09	Planned Concept Detached Dwellings
"B" TT 17932-10	Planned Concept Detached Dwellings
"B" TT 17932-11	Planned Concept Detached Dwellings
"B" TT 17932-112	Planned Concept Detached Dwellings
"B" TT 17932-13	Planned Concept Detached Dwellings
"B" TT 17932-14	Planned Concept Detached Dwellings
"B" TT 17932-15	Multi-Family Dwellings
"B" TT 17932-16	Multi-Family Dwellings
"B" TT 17932-17	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17932-18	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17932-19	Neighborhood Center
Future Site Development Permits	Community Facilities (incl. potential Parks, Schools, Recreation Facilities and/or church)

Subarea 3.3, "A" Tentative Tract (TT) Map 17933

"B" TT 17933-01	Conventional Single-Family Detached Dwellings
"B" TT 17933-02	Conventional Single-Family Detached Dwellings
"B" TT 17933-03	Conventional Single-Family Detached Dwellings
"B" TT 17933-04	Conventional Single-Family Detached Dwellings
"B" TT 17933-05	Conventional Single-Family Detached Dwellings
"B" TT 17933-06	Conventional Single-Family Detached Dwellings
"B" TT 17933-07	Planned Concept Detached Dwellings
"B" TT 17933-08	Planned Concept Detached Dwellings
"B" TT 17933-09	Planned Concept Detached Dwellings
"B" TT 17933-10	Planned Concept Detached Dwellings
"B" TT 17933-11	Planned Concept Detached Dwellings
"B" TT 17933-12	Planned Concept Detached Dwellings
"B" TT 17933-13	Planned Concept Detached Dwellings
"B" TT 17933-14	Multi-Family Dwellings
"B" TT 17933-15	Multi-Family Dwellings
"B" TT 17933-16	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17933-17	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17933-18	Neighborhood Center
Future Site Development Permits	Community Facilities (incl. potential Parks, Schools, Recreation Facilities and/or church)

Subarea 3.4, "A" Tentative Tract (TT) Map 17934

"B" TT 17934-01	Conventional Single-Family Detached Dwellings
"B" TT 17934-02	Conventional Single-Family Detached Dwellings
"B" TT 17934-03	Conventional Single-Family Detached Dwellings
"B" TT 17934-04	Conventional Single-Family Detached Dwellings
"B" TT 17934-05	Conventional Single-Family Detached Dwellings
"B" TT 17934-06	Conventional Single-Family Detached Dwellings
"B" TT 17934-07	Planned Concept Detached Dwellings
"B" TT 17934-08	Planned Concept Detached Dwellings
"B" TT 17934-09	Planned Concept Detached Dwellings
"B" TT 17934-10	Planned Concept Detached Dwellings
"B" TT 17934-11	Planned Concept Detached Dwellings
"B" TT 17934-12	Planned Concept Detached Dwellings
"B" TT 17934-13	Planned Concept Detached Dwellings
"B" TT 17934-14	Planned Concept Detached Dwellings
"B" TT 17934-15	Multi-Family Dwellings
"B" TT 17934-16	Multi-Family Dwellings
"B" TT 17934-17	Multi-Family Dwellings
"B" TT 17934-18	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17934-19	Neighborhood Center
Future Site Development Permits	Community Facilities (incl. potential Parks, Schools, Recreation Facilities and/or church)

Subarea 3.5, "A" Tentative Tract (TT) Map 17935

"B" TT 17935-01	Conventional Single-Family Detached Dwellings
"B" TT 17935-02	Conventional Single-Family Detached Dwellings
"B" TT 17935-03	Conventional Single-Family Detached Dwellings
"B" TT 17935-04	Conventional Single-Family Detached Dwellings
"B" TT 17935-05	Conventional Single-Family Detached Dwellings
"B" TT 17935-06	Planned Concept Detached Dwellings
"B" TT 17935-07	Planned Concept Detached Dwellings
"B" TT 17935-08	Planned Concept Detached Dwellings
"B" TT 17935-09	Planned Concept Detached Dwellings
"B" TT 17935-10	Planned Concept Detached Dwellings
"B" TT 17935-11	Planned Concept Detached Dwellings
"B" TT 17935-12	Planned Concept Detached Dwellings
"B" TT 17935-13	Multi-Family Dwellings
"B" TT 17935-14	Multi-Family Dwellings
"B" TT 17935-15	Multi-Family Dwellings (potential Affordable Housing Site)

"B" TT 17935-16	Community Facilities (potential community center, church, fire station, library, etc.)
Future Site Development Permits	Community Facilities (incl. potential Parks, Schools, Recreation Facilities and/or church)

Subarea 3.6, "A" Tentative Tract (TT) Map 17936

"B" TT 17936-01	Conventional Single-Family Detached Dwellings
"B" TT 17936-02	Conventional Single-Family Detached Dwellings
"B" TT 17936-03	Conventional Single-Family Detached Dwellings
"B" TT 17936-04	Conventional Single-Family Detached Dwellings
"B" TT 17936-05	Conventional Single-Family Detached Dwellings
"B" TT 17936-06	Conventional Single-Family Detached Dwellings
"B" TT 17936-07	Planned Concept Detached Dwellings
"B" TT 17936-08	Planned Concept Detached Dwellings
"B" TT 17936-09	Planned Concept Detached Dwellings
"B" TT 17936-10	Planned Concept Detached Dwellings
"B" TT 17936-11	Planned Concept Detached Dwellings
"B" TT 17936-12	Planned Concept Detached Dwellings
"B" TT 17936-13	Planned Concept Detached Dwellings
"B" TT 17936-14	Planned Concept Detached Dwellings
"B" TT 17936-15	Multi-Family Dwellings
"B" TT 17936-16	Multi-Family Dwellings
"B" TT 17936-17	Multi-Family Dwellings
"B" TT 17936-18	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17936-19	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17936-20	Urban Activity Center
Future Site Development Permits	Community Facilities (incl. potential Parks, Schools, Recreation Facilities and/or church)

Subarea 3.7, "A" Tentative Tract (TT) Map 17937

"B" TT 17937-01	Conventional Single-Family Detached Dwellings
"B" TT 17937-02	Conventional Single-Family Detached Dwellings
"B" TT 17937-03	Conventional Single-Family Detached Dwellings
"B" TT 17937-04	Conventional Single-Family Detached Dwellings
"B" TT 17937-05	Conventional Single-Family Detached Dwellings
"B" TT 17937-06	Conventional Single-Family Detached Dwellings
"B" TT 17937-07	Planned Concept Detached Dwellings
"B" TT 17937-08	Planned Concept Detached Dwellings
"B" TT 17937-09	Planned Concept Detached Dwellings
"B" TT 17937-10	Planned Concept Detached Dwellings
"B" TT 17937-11	Planned Concept Detached Dwellings
"B" TT 17937-12	Planned Concept Detached Dwellings
"B" TT 17937-13	Planned Concept Detached Dwellings

"B" TT 17937-14	Planned Concept Detached Dwellings
"B" TT 17937-15	Multi-Family Dwellings
"B" TT 17937-16	Multi-Family Dwellings
"B" TT 17937-17	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17937-18	Multi-Family Dwellings (potential Affordable Housing Site)
Future Site Development Permits	Community Facilities (incl. potential Parks, Schools, Recreation Facilities and/or church)

Subarea 3.8, "A" Tentative Tract (TT) Map 17938

New "A" Map lots to be addressed by future Site Development Permits	Urban Activity Center uses
New "A" Map lots to address existing leases	Agricultural and Other On-Going Uses allowed by PC Program Text Section III.H.2
Future Site Development Permits	Community Facilities (incl. potential Sports Park)

The following tentative tract numbers and associated numbered (buildable) lots are assumed in Planning Area 4:

Subarea 4.1, "A" Tentative Tract (TT) Map 17941

New "A" Map lots to be addressed by future Site Development Permits	Urban Activity Center uses
"B" TT 17941-01	Multi-Family Dwellings (potential Affordable Housing Site)
"B" TT 17941-02	Multi-Family Dwellings (potential Affordable Housing Site)
Future Site Development Permits	Community Facilities (incl. potential Parks, Schools, Recreation Facilities and/or church)

3.3.4 SITE DEVELOPMENT PERMIT

As indicated above, the "A" maps depict large super pads that identify infrastructure improvements, mass grading, and open space areas. Although "B" tentative tract maps are required to further subdivide "A" tentative maps in order to create legal building sites for single-family detached dwellings, the vesting tentative tract maps have already created legal building sites for multi-family housing, retail centers, community facilities, and other non-residential uses. County approval of site development permits are then necessary prior to construction of these uses. This Addendum provides the necessary CEQA clearances for any "A" or "B" vesting tract maps and future Site Development Permits. At the time that the site development applications are filed, the County would verify the consistency with the information submitted with the "A" tentative tract map.

3.3.5 REQUIRED INFRASTRUCTURE

FEIR 589 and FEIR 584 identified the infrastructure improvements that would be required to adequately serve the Rancho Mission Viejo Planned Community. Specifically, these documents

included circulation improvements, schools, trails and bikeways, domestic and non-domestic water and sewer facilities, electrical substations, water quality facilities, emergency services, and other support facilities. Although precise locations for the infrastructure facilities were not always identified, the basic parameters for these facilities were identified. For facilities that were located within development areas, the impacts associated with implementation of the improvements were assumed as part of the larger development impacts.[11] Where improvements were identified as being outside development areas (e.g., roadways, storm drain facilities and outlets, trails, and a few water storage facilities), the anticipated impacts of these facilities were calculated using conceptual plans. The full impact analysis for the Rancho Mission Viejo Planned Community, therefore, included both the development areas and impacts associated with the infrastructure overlay. The following are the infrastructure facilities for Planning Areas 3 and 4.

Roadways

Exhibit 4 identifies the roadway circulation plan for Planning Areas 3 and 4. Cow Camp Road is the main east-west roadway and is designed as a major arterial highway. "K" Street (also identified as "F" Street on the Master Plan of Arterial Highways) is an internal roadway and is designed as a secondary highway. Additional internal collector roads would be constructed within the development area. None of the internal roadways would result in any additional impacts. The functions of the roadways are evaluated as part of the traffic analyses. As previously noted, Segment 1 of Cow Camp Road has been the subject of a separate Addendum and a portion of it has been constructed. The remainder of Segment 1 is under construction and is anticipated to be complete in early 2015.

- **Cow Camp Road (Segment 2).** Cow Camp Road is proposed as an east-west major arterial highway with up to a 60 mile per hour design speed that will extend from Antonio Parkway to the existing Ortega Highway near the common boundary of the Rancho Mission Viejo Planned Community and Caspers Wilderness Park. A portion of Cow Camp Road, known as Segment 1, is located within Planning Areas 1 and 2. The segment adjacent to and within Planning Area 3 is known as Segment 2 and would include four signalized intersections and a bridge at Cañada Gobernadora (Gobernadora Bridge) and another bridge over San Juan Creek to Planning Area 4. Exhibit 21 provides the conceptual engineering plan for Cow Camp Road, Segment 2. To adhere to existing hillside contours, construction phasing, and habitat preservation and to provide enhanced wildlife crossings, the eastbound and westbound lanes across Cañada Gobernadora would be built as two separate bridge structures. A similar design would also be used for the bridge across San Juan Creek. The typical cross-section for Cow Camp Road would be consistent with the County of Orange Standard Plans for a major arterial highway. In its ultimate configuration, there would be six general-purpose lanes (three westbound and three eastbound) lanes west of "C" Street and four general purpose lanes east of "C" Street to Ortega Highway. The roadway would have 8-foot-wide shoulders and 6-foot-wide sidewalks with a raised curbed median 20 feet wide on the western reach. The sizing of the Cow Camp Road connection to Ortega Highway (a two-lane roadway) would be determined during the final design of the roadway, and confirmed by the traffic analysis, to ensure there is adequate roadway capacity while minimizing environmental impacts when crossing San Juan Creek. For purposes of this evaluation, it is assumed that the full four-lane cross section would extend across San Juan Creek and connect with Ortega Highway. This is consistent with the cross section on the MPAH and would reflect the maximum environmental impact. Cow Camp Road was addressed in FEIR 589 as "New

[11] FEIR 589 assumed all resources within development areas would be removed. Therefore, the impacts associated with implementation of support facilities located within development areas would already be included in the impact analysis of the development areas.

Ortega Highway". Cow Camp Road is designated as a Scenic Highway Landscape Corridor by the General Plan. In compliance, a 25-foot scenic highway easement from curb-line will be clear of structures and signage.

- **"K" Street.** "K" Street is proposed as an east-west secondary arterial highway or collector street with a 50 miles per hour minimum design speed.[12] It will extend from the proposed partial interchange at "F" Street in Planning Area 2; will cross Cañada Gobernadora; and will traverse Planning Area 3 along a southeasterly alignment and intersect "C" Street and Cow Camp Road. Exhibit 22 depicts the conceptual engineering plan for "K" Street as it crosses Cañada Gobernadora. Based on the current Planning Areas 3 and 4 Addendum Traffic Study, anticipated average daily trips on "K" Street would not meet the threshold of classification as a secondary arterial highway; however, based on its current designation, the Circulation Plan (Exhibit 4) depicts "K" Street as an arterial. For planning purposes, the typical cross-section for "K" Street is assumed to be consistent with the County of Orange Standard Plans for a secondary arterial highway (i.e., a four-lane undivided roadway). The cross-section for a collector road (two-lane undivided roadway) may be sufficient for the bridge crossing Cañada Gobernadora, which would minimize environmental impacts. The ultimate cross section will be determined during the design process. The impacts for "K" Street were included as part of the impact totals in FEIR 589 and are depicted on the graphics; however, it was not identified by name in the FEIR.

- **"C" Street.** "C" Street is proposed as a north-south two-lane secondary arterial located on the western edge of Planning Area 3 that will intersect with Cow Camp Road in the south-west corner of the Planning Area.[13]

- **Gibby Road.** Gibby Road is an existing ranch road that provides access to industrial uses in Planning Area 3. The roadway will be improved to County standards and a bridge structure will replace the existing Arizona crossing of San Juan Creek. The bridge would be two lanes wide and would connect to the existing traffic signal on Ortega Highway at Gibby Road.

- **Ortega Highway.** Ortega Highway would be modified to allow the connection of Cow Camp Road. This will include options for an at-grade intersection or roundabout. Portions of Ortega Highway may be realigned in the vicinity of Planning Area 4 while maintaining the two lane configuration. Minor roadway and drainage improvements would be constructed with the adjacent property development. An additional roundabout or signalized intersection would be added northeast of the Cow Camp Road intersection to provide access to the adjacent lots.

- **Local Access Roads.** Roadways within Planning Area 4 will provide two-lane access from Ortega Highway into the adjacent residential and commercial use areas within Planning Area 4.

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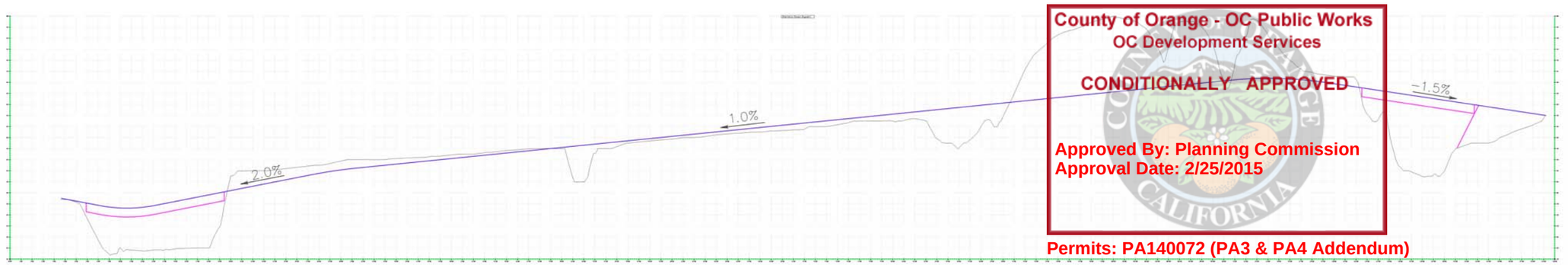
12 "K" Street has been depicted in past studies as providing the connection to Planning Area 2 and traversing Planning Area 3. The "K" Street alignment is comparable to "F" Street as shown on the MPAH. However, the alignment for "K" Street is slightly modified from what was presented in FEIR 589 and in the SSHCP. The proposed alignment provides a direct east-west connection between Planning Areas 2 and 3 across Cañada Gobernadora, whereas the conceptual "K" Street alignment analyzed in FEIR 589 and the SSHCP would have crossed Cañada Gobernadora on a northwest-southeast trend. The alignment, which is generally consistent with the MPAH configuration, reduces impacts on the biological resources in Cañada Gobernadora. It should also be noted that the "F" Street shown on the MPAH is not the "F" Street discussed in this Addendum (and is being processed with a separate Project Study Report). The "F" Street in this document follows an alignment comparable to the SR-241 alignment shown on the MPAH.

13 Within Planning Area 3, "C" Street follows an alignment comparable to Cristianitos Road as shown on the MPAH.



County of Orange - OC Public Works
OC Development Services

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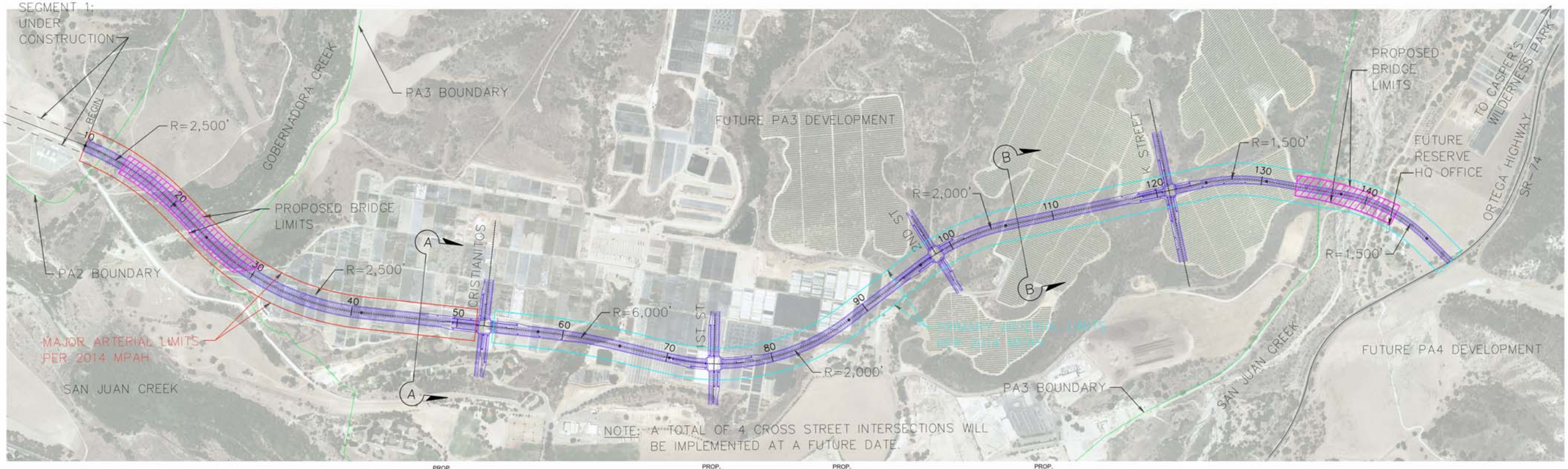
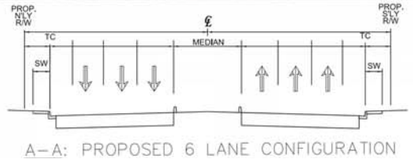
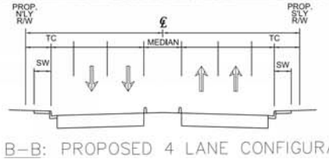
Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)





A–A: PROPOSED 6 LANE CONFIGURATION



B–B: PROPOSED 4 LANE CONFIGURATION

COW CAMP ROAD PA3:
SKEWED INTERSECTION CONCEPT ALIGNMENT
APPROX. TOTAL LENGTH = 13,850'

Source: Michael Baker International 2014

Cow Camp Road Conceptual Engineering Plan

Exhibit 21

Planning Areas 3 and 4 Master and Subarea Plans

N W E S

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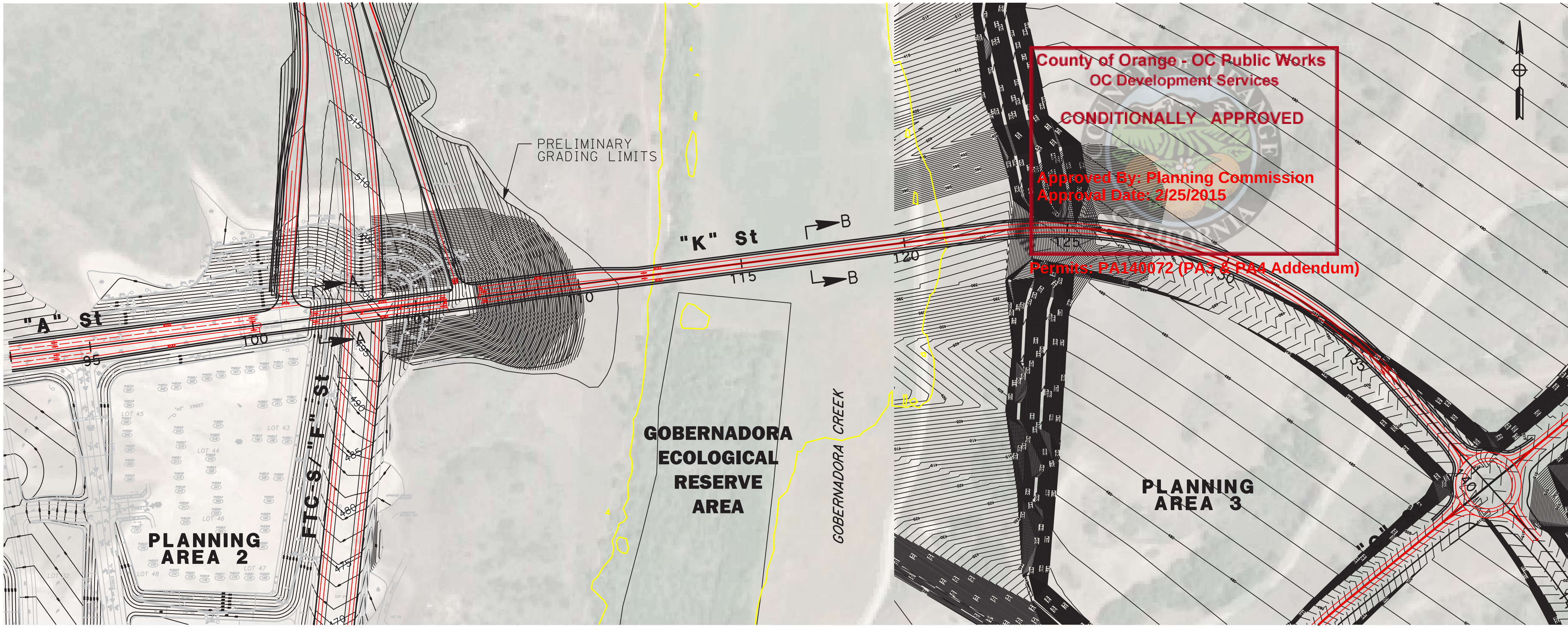

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

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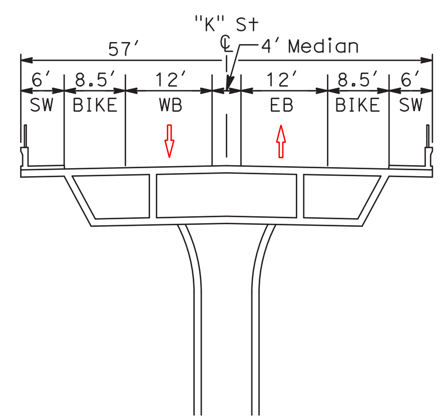
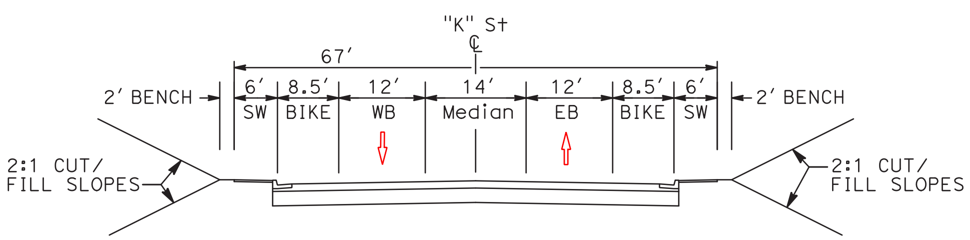
Permits: PA140072 (PA3 & PA4 Addendum)



LEGEND:

100 YEAR PER ROMP

PA3 ROUGH TOUCH GRADING



SECTION A-A
NTS

SECTION B-B
NTS

Source: Parsons 2014

"K" Street Conceptual Engineering Plan

Exhibit 22

Planning Areas 3 and 4 Master and Subarea Plans

BonTerra PSOMAS

As discussed in Section 2.8.2, "F" Street would also be an important component of the circulation network that would serve development in Planning Areas 3 and 4. "F" Street is being processed as a separate project and would serve more than just Planning Areas 3 and 4.

Trails and Bikeways

In conjunction with the development of Planning Areas 3 and 4, the Project will provide for the construction of a portion of the San Juan Regional Bikeway Trail. This trail will be sized to accommodate multiple uses, including access for Ranch, SMWD, and SDG&E vehicles as well as (potentially) neighborhood electric vehicles. In addition to this bikeway, two community trails are being implemented in Planning Area 3. Refer to Exhibit 10a for a depiction of all trails and bikeways in Planning Areas 3 and 4. Exhibit 10b is the Master Trail and Bikeway Implementation Plan and provides a context for the trails and their connectivity outside of Planning Areas 3 and 4.

- **San Juan Creek Class I Bikeway.** Planning Area 3 would implement that portion of the San Juan Creek Class I Bikeway Trail located within the proposed Planning Area 3. The trail is located on the north side of San Juan Creek, south of Cow Camp Road.

- **San Juan Creek Regional Riding and Hiking Trail.** The San Juan Creek Regional Riding and Hiking Trail is depicted on the Master Plan of Riding and Hiking Trails as being located on the south side of San Juan Creek. The right-of-way for the regional riding and hike trail will be reserved but consistent with the Rancho Mission Viejo Planned Community requirements, the trail will not be implemented until the development of Planning Area 5 to ensure there is logical trail linkage to the Planning Area 4 area.

- **Community Trail Z.** Trail Z will be implemented within Planning Area 3 after County constructs the portion of trail westerly of Trail "X" (discussed below) known as Wagon Wheel Trail connecting with General Thomas F. Riley Wilderness Park.

- **Community Trail X.** This community trail provides linkage as a designated regional riding and hiking trail, constructed within Planning Area 3, but only after County constructs the portion of trail westerly of Trail "X" known as Wagon Wheel Trail connecting with General Thomas F. Riley Wilderness Park.

Water Storage and Wastewater Conveyance Facilities

With the development of Planning Areas 3 and 4, water and wastewater facilities will be provided. The water facilities would include four domestic water reservoirs, three non-domestic water reservoirs, and the installation of water mains for both domestic and non-domestic water located predominately within the future development area. One of the domestic water reservoir sites is located easterly of the development area boundary within the open space (Habitat Reserve) area. All these facilities, including the domestic water reservoir site within the Habitat Reserve area were previously addressed by FEIR 584 and FEIR 589. All other reservoirs and water conveyance facilities would be located within the development areas, with no impacts beyond those identified for the development areas. The domestic and non-domestic water facilities are depicted on Exhibits 5 and 6, respectively. Facilities would also include water mains and distribution lines internal to the Planning Areas, which would be located predominately within future Planning Areas 3 and 4 roadways. These would be for both domestic and non-domestic water.

Exhibit 7 depicts the locations of the proposed wastewater facilities. Two sewer lift stations would be constructed—one each in Planning Subareas 3.8 and 4.1. These facilities would be located within the development area. The proposed lift station would be designed to collect sewage flows emanating from Planning Areas 3 and 4 of the Rancho Mission Viejo Planned Community, then

pump it to the Chiquita Water Reclamation Plant located northwest of the Project site near Planning Area 2. The facilities would be housed in a structure. Sewage odors would be substantially reduced with installation of the SMWD's Standard Design requirements for sewage lift stations. Associated facilities generally include installation of a hydrogen peroxide storage tank, and a metering pump with the piping and electrical conduits are required at the sewage lift station. These facilities were evaluated in FEIR 589.

In addition, consistent with FEIR 589, the plans identify a domestic water reservoir serving Zone 3 located in open space (Habitat Reserve) area. The precise location and size of the facility will be determined at the time tentative tract maps are processed. The reservoirs are generally circular steel or concrete water tanks. The pad supporting the reservoir would generally be an acre or less. The height of these tanks would be approximately 32 to 35 feet, with a diameter of approximately 110 feet. For the domestic reservoirs, a chlorination facility would be provided to ensure water quality. A color coat and landscaping is generally used to reduce the visual intrusion of the tanks. Generally, the reservoir would have a 24-foot-wide access road, with two 10-foot lanes. The easement for the roadway would be generally be about 40 feet wide; however, the width would vary due to slope easement. Pipelines connecting to the reservoir are located within the roadway.

Storm Drain Facilities and Outfalls

The local drainage system for Planning Areas 3 and 4 employs a variety of design features that are common to urban drainage systems, which provide (1) storm water management, (2) flood protection, (3) water quality treatment, and (4) hydrologic mitigation. These design features include a storm drain system associated with the streets as the initial urban storm water collection and conveyance system point. All storm drains outlet into a water quality and hydrologic mitigation basin located in the interior of the Project site prior to ultimately outletting from the development boundary in conformance with County of Orange standards.

The preliminary storm drainage system for the entire Rancho Mission Viejo Planned Community was evaluated in the *Comprehensive Regional Stormwater Plan* for the *Ranch Plan Planned Community Runoff Management Plan* (ROMP), prepared by PACE and approved by the County of Orange on April 16, 2013. The ROMP has multiple intended functions as a watershed planning and guidance document for future development occurring within the Rancho Mission Viejo Planned Community; the ROMP will ensure adequate storm water infrastructure is provided and the long-term protection of the water resources through mitigation of development impacts. The information contained in the ROMP can provide different types of guidance and benefits depending on the uses.

The storm drainage system for Planning Areas 3 and 4 is shown on Exhibit 8, and the preliminary water quality system is shown on Exhibit 9. The gravity storm drain systems/networks are composed of a variety of pipe diameters. All the storm drain systems collect local drainage from street inlets within the development and discharge into water quality basins and hydrologic mitigation basins prior to ultimately discharging to the existing natural canyon floodplains via outfalls. The interior drainage within the development will be designed to ensure that 100-year flood protection is provided to habitable structures for storm events larger than the design storm of the storm drain pipe system (i.e., 10-year storm). The interior drainage system, including streets, provides the conveyance path for extreme storm event runoff within the Project site to ensure that the combined hydraulics of the interior drainage can provide 100-year level of protection.

Six local flood-control mitigation basins are proposed for Planning Area 3 and an additional five basins are proposed in Planning Area 4 (see Exhibit 8). The intended effect of these local flood-

control basins is to provide flood control at each proposed storm drain outlet in order to provide protection for the San Juan Creek tributaries by reducing future peak storm flow rates to the existing condition level in conformance with County of Orange standards.

The Planning Areas 3 and 4 water quality facilities have been sized to retain runoff volume from the 85th percentile, 24-hour design storm for the developed area tributary to each proposed outfall. Outfalls that do not discharge to the San Juan Creek floodplain are also designed to achieve the flow duration control standard for hydromodification control.

Outfalls to San Juan Creek and Verdugo Canyon are generally consistent with the ROMP. Minor modifications to the ROMP in Planning Area 4 are due to the reduced development footprint in this planning area (discussed further in Section 4.9, Hydrology and Water Quality). The San Juan Creek outfalls were identified and evaluated in FEIR 589. The storm drain outfalls from each of these facilities will require demonstration that the outfalls are designed in accordance with Orange County design criteria to prevent excessive erosion and scour downstream of the outfalls. These outfalls would generally be composed of specialty structures that would mitigate hydraulic impacts of the storm drain through producing a lower velocity at the outlet. The structure would generally include some form of an energy dissipation device and flexible revetment to minimize localized erosion at the transition between the outfall structure and the downstream natural channel and/or creek. The design of these facilities will begin during the preparation of the tentative map and complete with the approval of rough grading plans. All County design standards will be complied with.

Utilities

EIR 589 indicated the need to extend a 12-inch gas main from west of Interstate (I) 5, east to the Rancho Mission Viejo Planned Community. This extension, when required, will be planned, environmentally documented, and constructed by the Southern California Gas Company. Concurrent with the development of Planning Area 1, a dry 12-inch main has been constructed in Antonio Parkway and Cow Camp Road to supply to the general area and to the Rancho Mission Viejo Planned Community development east of Planning Area 1, including Planning Areas 2, 3, 4 and 5.

Existing SDG&E transmission lines (12 kV and 138 kV) may need to be relocated and other distribution facilities will be constructed with the development of these planning areas and the infrastructure improvements supporting this development. Although the County has no discretionary approval authority over the SDG&E activities, this component of the Project has been included in this Addendum to ensure there is full disclosure of all aspects of the Project and because SDG&E would need to relocate the power lines prior to the development of Planning Areas 3 and 4. Existing transmission facilities consist of wood or steel poles, up to 80 feet in height, and associated wire, hardware, and access facilities within an existing 100-foot-wide easement. New equivalent transmission facilities would be constructed within a new easement granted by RMV, if relocation is necessary.[14] SDG&E would construct, own, operate, and maintain its relocated electric transmission lines within the new easement. Access roads to the towers would be 14 feet wide and suitable for heavy utility vehicles to allow routine maintenance. Construction of these roadways would be conducted in accordance with guidelines for new construction of access roads as provided by SDG&E. The relocated power lines and associated easements would be located within the development area.

[14] If, due to lateral loading, height, or alignment, relocation work cannot be performed with the use of wood poles, up to two steel poles may be needed to complete this transmission relocation.

The relocation and improvement of RMV owned water facilities will be coordinated with the development of each planning area.

Fire Protection Services

The Orange County Fire Authority (OCFA) has planned a fire station to be constructed within Planning Area 3. This station will serve Planning Area 3 and the surrounding area. A station in this location is consistent with the development and impact assumptions in FEIR 589. As discussed in Section 3.3.2, the fire station would be located in Subareas 3.3, 3.5, or 3.6. The precise location will be determined in conjunction with OCFA.

Open Space Dedication Plan

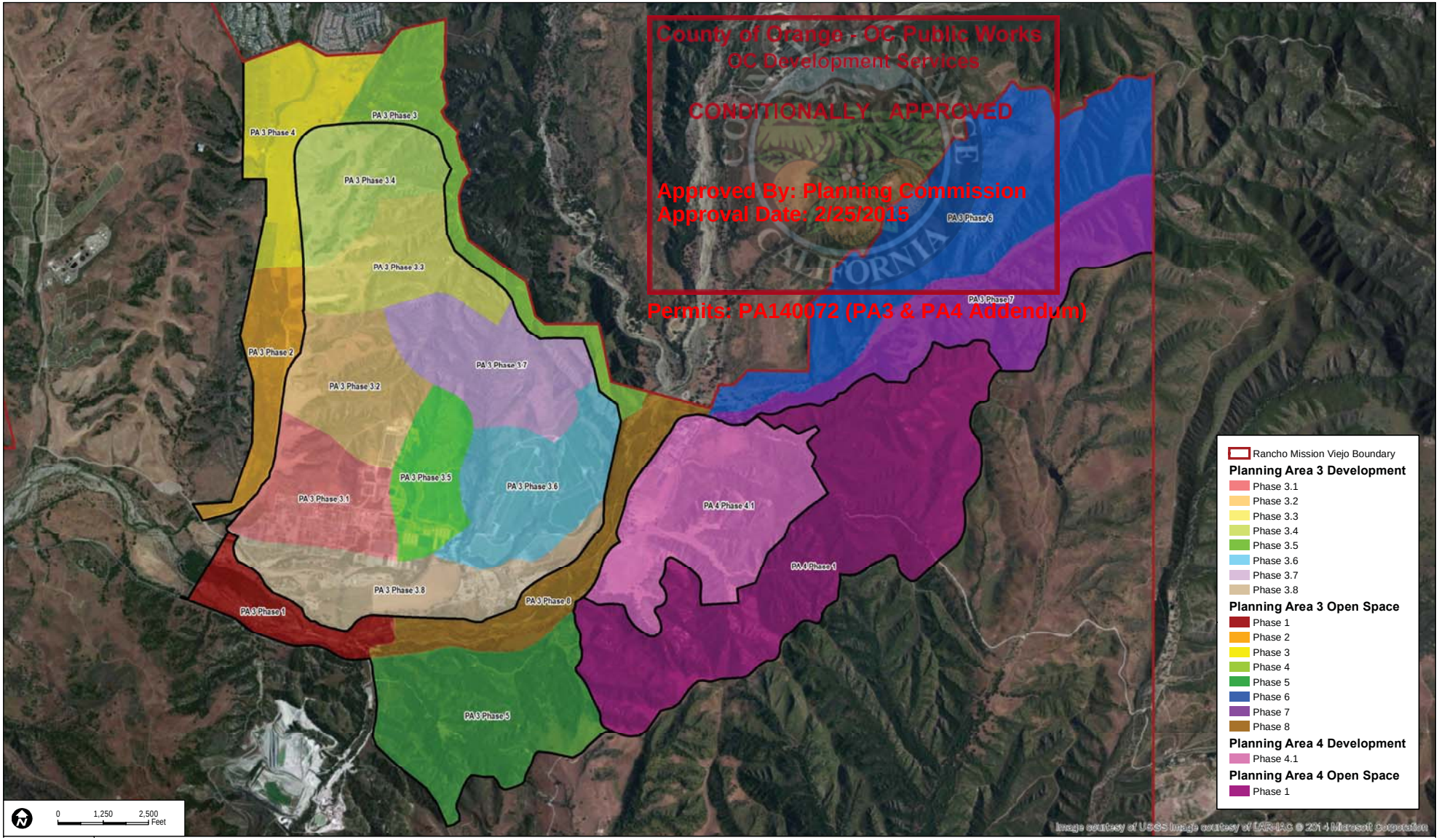
The participation of the Rancho Mission Viejo in the SSHCP is an important component of the SSHCP Habitat Reserve. The preservation of open space, which is provided for in the ITP issued by the USFWS (see Section 2.5.1 for a discussion of the ITP), together with the Habitat Reserve Management and Monitoring Program (HRMP) would minimize and mitigate the impacts associated with the development of the Rancho Mission Viejo Planned Community. The ITP provides for phased dedication of open space in conjunction with development. Exhibit 23 depicts the phasing concept for the open space dedication associated with Planning Areas 3 and 4 and the associated infrastructure improvements. The preservation of 3,782 acres of open space are associated with these two planning areas. The dedication areas include area outside the actual planning areas and are designed to ensure protection of resources comparable to those being affected by the development of the subareas. The locations for dedication were conceptually developed as part of the ITP issued by the USFWS as part of the SSHCP. This is consistent with the ITP and no amendment to the SSHCP would be required. The dedication and consistency with the SSHCP Reserve Design is further discussed in Section 4.4.

3.4 INTENDED USES OF THIS ADDENDUM

FEIR 589 was a Program EIR, which was intended to address the overall program for implementing the Rancho Mission Viejo Planned Community. FEIR 584, which addressed the Rancho Mission Viejo Planned Community in the context of the SSHCP, has been referenced in this Addendum as it pertains to biological resources. This Addendum, when considered in conjunction with FEIR 589 and FEIR 584, the Findings of Fact, Statement of Overriding Considerations associated with FEIR 589, and the RCM, is intended to provide the necessary CEQA clearance for the required approvals for the following actions within Planning Areas 3 and 4: [15]

- Master Area Plan for Planning Area 3 and Planning Area 4
- Subarea Plans for Planning Area 3 and Planning Area 4
- Administrative revisions to the Local Park Implementation Plan
- Site Development Permits
- Vesting Tentative Tract Maps (“A” maps) for Planning Area 3 and Planning Area 4

[15] Though the Orange County Board of Supervisors adopted a Findings of Fact and Statement of Overriding Consideration in conjunction with the certification of FEIR 584, there were no unavoidable significant impacts as it pertains to biological resources. Therefore, only the Findings of Fact and Statement of Overriding Consideration for FEIR 589 are referenced in this Addendum.



Source: Dudek 2014

Open Space Dedication Plan

Exhibit 23

Planning Areas 3 and 4 Master and Subarea Plans

BonTerra PSOMAS

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- Approval of Tentative Tract Maps ("B" maps) that are found consistent with the approved "A" maps
- "Final" Subdivision Map Recordation
- Grading Permits
- Building Permits
- Project-level Water Quality Management Plan (WQMP)
- Approval of plans and specifications for roadway improvements
- Approval of infrastructure, including water and wastewater facilities, supporting the development.

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Permits: PA140072 (PA3 & PA4 Addendum)

These approvals are consistent with the listing of approvals provided in Section 3.8 of FEIR 589.

3.4.1 AGREEMENTS, PERMITS AND APPROVALS

In addition to the County of Orange approvals identified above, the following agreements, permits, and approvals will be needed from other agencies for the Project:

U.S. Army Corps of Engineers

- Letter of Permission pursuant to the Special Area Management Plan.

California Department of Fish and Wildlife

- Subnotification pursuant to the Master Streambed Alteration Agreement.

San Diego Regional Water Quality Control Board

- Section 401 certification pursuant to the Clean Water Act.
- Waste Discharge Permit per the Porter-Cologne Water Quality Control Act.

California Department of Transportation

- Encroachment permits and approval of all improvements within right-of-way under their jurisdiction (i.e., improvements on Ortega Highway).

Santa Margarita Water District

- Approval of plans for proposed water and wastewater transmission lines, water storage reservoir.
- Approval of a Water Supply Verification (WSV) prior to the County's approval of final tract maps for Rancho Mission Viejo Planned Community.

Utilities, including San Diego Gas & Electric, Southern California Gas Company, AT&T, and Cox Communications

- Provision for utilities serving Planning Areas 3 and 4, including but not limited to new power and gas lines, telecommunications lines, and community access television (cable TV).

- Relocation of a 12-kV and a 138-kV transmission line and adjustment to the SDG&E easement.

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Permits: PA140072 (PA3 & PA4 Addendum)

SECTION 4.0 ENVIRONMENTAL ANALYSIS

The analysis in this Addendum evaluates whether the potential impacts associated with the Master Area Plans, Subarea Plans, and associated approvals, as outlined in Section 3.0, Project Description, are substantially the same as those addressed in FEIR 589 and FEIR 584, as it pertains to biological resources. This evaluation includes a determination as to whether the implementation of the development in Planning Areas 3 and 4 would result in any new significant impacts or a substantial increase in a previously identified significant impact.

Section III.I of the *Ranch Plan Planned Community Program Text* identifies necessary urban infrastructure (including, but not limited to, roadways, transportation corridors, utilities, and flood-control structures) as permitted uses within the open space, which includes the Habitat Reserve. Both FEIR 584 and FEIR 589 identified infrastructure improvements (e.g., roadways, trails, pipelines water quality basins, and water storage facilities) that would be constructed outside the development footprint are conceptually shown to the extent that they could be identified. As previously indicated, the impact assessment in both FEIR 584 and FEIR 589 made assumptions regarding the size, location, and extent of habitat removal and species impacts as part of the evaluation of the Rancho Mission Viejo Planned Community; however, it was acknowledged that the precise location may shift to address engineering constraints, to minimize impacts, or to address other factors that could not be known until more detailed plans are developed. Any such modifications are evaluated in this Addendum.

Although Section 15164 of the State CEQA Guidelines does not stipulate the format or content of an Addendum, the topical areas identified in the County of Orange Environmental Checklist (Checklist) were used as guidance for this Addendum. This comparative analysis provides the County of Orange with the factual basis for determining whether any changes in the Project, any changes in circumstances, or any new information since FEIR 589 and FEIR 584 were certified require additional environmental review or preparation of a subsequent EIR.

Pursuant to Section 15162 of the State CEQA Guidelines, the County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that (1) implementation of Planning Areas 3 and 4 does not propose substantial changes to the Rancho Mission Viejo Planned Community; (2) no substantial changes in circumstances would occur that would require major revisions to FEIR 589 or FEIR 584; and (3) no new information of substantial importance has been revealed since the certification of FEIR 589 and FEIR 584.

A mitigation program was adopted as a part of FEIR 589 that minimized impacts associated with implementation of the Rancho Mission Viejo Planned Community. In addition, there are regulatory conditions from *The Ranch Plan Planned Community Text* and provisions from the settlement agreements that are applicable to implementation of Planning Areas 3 and 4. The mitigation program applicable to Planning Areas 3 and 4 is contained in the RCM included in Appendix A.

Planning Areas 3 and 4 would require improvements to intersections on Ortega Highway, which is SR-74. The improvements on Ortega Highway would include a connection of Cow Camp Road and a new intersection northeast of the Cow Camp Road connection. The Cow Camp Road connection would require either an at-grade intersection or a roundabout. Portions of Ortega Highway may need to be realigned in the vicinity of the connection; however, the current two-lane configuration would be retained. To facilitate the Caltrans evaluation of impacts within their jurisdiction, the analysis of improvements to Ortega Highway has been discussed in a separate subheading for each of the Environmental Checklist topics. However, for topics such as biological resources where the analysis has quantified impacts, the Caltrans evaluation is a subset and has been included in the impact total analysis.

In certifying FEIR 589, the Findings of Fact for unavoidable significant impacts were made for the following topical areas:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Land Use and Relevant Planning
- Mineral Resources
- Public Services (Fire Protection Services and Facilities)
- Traffic And Circulation
- Water Resources

As previously indicated, FEIR 584 has been used as the basis for the analysis of biological resources in this Addendum. Since FEIR 584 addressed the land use development alternative (known as B-12) that was developed as part of the Settlement Agreement (see Section 2.3), biological impacts were reduced to less than significant.

Several of the unavoidable significant impacts listed above were associated with development of certain locations within the Rancho Mission Viejo Planned Community. Therefore, not all these impacts apply to the development of Planning Areas 3 and 4. As discussed in Sections 4.1 through 4.17, unavoidable significant impacts associated with Planning Areas 3 and 4 are limited to:

- Aesthetics
- Agricultural Resources
- Air Quality
- Traffic And Circulation
- Water Resources

Sections 4.1 through Section 4.17 address the topical areas from the County of Orange CEQA Environmental Checklist. These sections have been set up as follows:

- **Summary of Previous Findings**—This provides a brief overview of the impact conclusions from FEIR 589 and, for biological resources, FEIR 584. This summary is at a high level and addresses the Rancho Mission Viejo Planned Community as a whole. A comprehensive summary is not required because the record as a whole is considered in making the determination if there are new significant impacts beyond what was addressed in the previous documents.

- **Project Impact Analysis**—This section includes the questions from the County of Orange CEQA Environmental Checklist; an analysis that is focused on Planning Areas 3 and 4 and associated infrastructure improvements; reference to the mitigation program that was adopted in conjunction with the certification of FEIR 589 and FEIR 584 applicable to the Project; the level of significance after mitigation; and a finding of consistency with the applicable FEIR.

4.1 AESTHETICS

Summary of Previous Findings

FEIR 589 addressed aesthetic impacts associated with the development of the Rancho Mission Viejo Planned Community, including impacts on scenic vistas, scenic highways, visual quality, and lighting and glare. Construction of the Rancho Mission Viejo Planned Community will result in substantial landform alterations. Mass grading would affect existing topography, vegetation cover, and visual character. Throughout much of the grading, large construction vehicles would be visible from adjacent (and some distant) vantage points. Barren slopes and new development in various stages of construction would be visible intermittently throughout the implementation of the Rancho Mission Viejo Planned Community. Though landscaping would involve the replanting of slopes in order to reduce the aesthetic impacts associated with grading, FEIR 589 determined that implementation of the Rancho Mission Viejo Planned Community would alter the visual characteristics of the RMV Planning Area.

Development and construction of the Rancho Mission Viejo Planned Community would introduce new sources of nighttime light into the area. New light sources are anticipated to occur from the illumination of on-site structures such as commercial buildings and recreational uses (i.e., signage, interior and exterior lighting), residences (i.e., interior and exterior lighting), and street and vehicle lights. Although these light sources are not expected to extend beyond the physical limits of the RMV Planning Area, they have the potential for spillage that would create night glow in an area that has very limited lighting sources at night. This change was identified as a significant impact in FEIR 589 because the Rancho Mission Viejo Planned Community would introduce lighting into a currently undeveloped area.

In conjunction with FEIR 589, the Orange County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations for aesthetic impacts.

Project Impact Analysis

a) Would the project have a substantial adverse effect on a scenic vista?

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

c) Would the project substantially degrade the existing visual character or quality of the site and its surroundings?

d) Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

The aesthetic impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. Based on the thresholds of significance, FEIR 589 identified a significant aesthetic impact due to changes to the topography and character of the site and from the introduction of new lighting sources. Though there are not designated scenic vistas within or adjacent to the Rancho Mission Viejo Planned Community, the aesthetic character would be substantially altered with planned development. For Planning Areas 3 and 4, FEIR 589 identified significant aesthetic impacts from the locations listed below. These impacts are discussed in more detail in FEIR 589 (see pages 4.10-5 through 4.10-20 of FEIR 589).

- Residential development would be visible in the background (approximately 1.5 miles) from locations in the Thomas F. Riley Wilderness Park. Existing residential development in Coto de Caza is also visible in the foreground from this location. Although the visual character of the area from this vantage point would not be significantly altered, proposed grading would impact ridgelines. Therefore, changes from this vantage point are considered significant.
- Proposed residential development in Planning Area 3 would be visible from West Ridge Trail in Caspers Wilderness Park. Existing residential development in Coto de Caza is also visible from this location. Due to the proximity of change in visual character that would occur in Planning Area 3 near this existing County park trail, FEIR 589 identified that implementation of this planning area would have significant aesthetic impacts.
- This proposed residential development in Planning Area 4 would be visible in the foreground from locations on Ortega Highway (near the Tree of Life Nursery). Because the implementation of proposed development in this area would result in the change of all land uses from this vantage point, aesthetic impacts are considered significant.
- From Ortega Highway south of Verdugo Canyon, views of the hillsides in the background would be obscured by proposed residential and commercial land uses in Planning Area 4. Although limited grading would be required in this portion of the planning area to implement proposed development, FEIR 589 concluded that the change in character of the landscape from open fields to urban development, as viewed from Ortega Highway, is considered a significant impact.
- Residential development proposed in Planning Area 3 would be visible from Ortega Highway at Cristianitos Road. Foreground views would continue to be dominated by the San Juan Creek floodplain. Future residences in Planning Area 3 may obscure the proposed alignment of Cow Camp Road; the bridge crossing from Planning Area 3 to Planning Area 2 would be visible. Implementation of residential development in this location would result in a change in land use from open space, orchards, and existing ranch uses. Although portions of the site visible from Ortega Highway are disturbed from industrial lease operations and agricultural activities, FEIR 589 determined that the change in character of the area is considered a significant aesthetic impact.

FEIR 589 also evaluated potential visual impacts from non-public areas and determined significant impacts at the following locations:

- The upper portion of Planning Area 3 would be visible along the community trail in Ladera Open Space, looking southeasterly from the Ladera Open Space Community Trail along Chiquita Ridge. FEIR 589 determined that the change in land use from open space to urban land uses would result in significant aesthetic impacts from this vantage point.
- FEIR 589 determined that the change in landform and visibility of development looking south from the southern edge of Coto de Caza is considered a significant aesthetic impact.
- When looking north and east from the then-Donna O'Neill Land Conservancy (now part of the Reserve at Rancho Mission Viejo) views of development in Planning Areas 3 and 4 would be visible. FEIR 589 found the change in land use from open space to urban land uses, as well as changes to the topographical character of the area, would result in significant aesthetic impacts from vantage points within the Conservancy.

The grading and development in Planning Areas 3 and 4 and the associated improvements (roadways, flood-control facilities, and water reservoirs) would change the visual character of the area. As discussed above, development would be visible along the ridgeline trails and from certain vantage points in Caspers Wilderness Park. However, there is an approximate 2,000-foot buffer between the development and the ridgeline separating the development from the park, as well as elevation differences to minimize visual impacts from the park.[16] The nature of the development and extent of disturbance proposed with the Master Area Plans and Subarea Plans for Planning Areas 3 and 4 is consistent with the assumptions of FEIR 589; therefore, no new impacts are anticipated.

Ortega Highway and Cow Camp Road are designated Landscape Corridors in the Scenic Highways Plan of the County of Orange General Plan's Transportation Element. According to the Scenic Highways Plan, Landscape Corridors "traverse developed or developing areas and has been designated for special treatment to provide a pleasant driving environment as well as community enhancement" (Orange County 2005b). Development within Planning Areas 3 and 4 would be visible from these two facilities; however, appropriate landscaping will serve to minimize potential aesthetic impacts and to provide compatibility with the Scenic Highway Plan. Ortega Highway is not designated as a Scenic Highway on the State Scenic Highway Program (Caltrans 2011). No new impacts on scenic highways or designated scenic vistas would occur with the proposed development in Planning Areas 3 and 4.

The land uses in Planning Areas 3 and 4 will introduce night lighting associated with outdoor structure lighting, street fixtures, recreational facilities, signage, and other facilities. Although these light sources are not expected to extend beyond the physical limits of the Rancho Mission Viejo Planned Community, they have the potential for spillage that would create night glow in an area that has very limited night light sources. This was addressed in FEIR 589 (pages 4.10-23 and 4.10-24) and identified as a significant unavoidable impact.

Improvements within Caltrans Right-of-Way

Extensive grading would not be required to construct the two new intersections with SR-74.[17] No new bridge structures or large-scale water quality features would be constructed within Caltrans right-of-way. SR-74 is not designated as part of the State Scenic Highway Program (Caltrans 2011). Though the development of Planning Areas 3 and 4 Project would alter the SR-74 viewshed and change the character of the surrounding lands, these improvements are not within State right-of-way or Caltrans jurisdiction. Therefore, no significant aesthetic impacts within Caltrans right-of-way are anticipated.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any new aesthetic impacts, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 140 and

[16] The water reservoir in the open space east of Planning Area 3 would be located within the 2,000-foot buffer.

[17] Locally, the roadway is known as Ortega Highway; however, the roadway is designated as SR-74 on the State Highway System. All improvements within the State right-of-way are under the jurisdiction of Caltrans. Therefore, the discussion of impacts within the Caltrans right-of-way will identify the roadway as SR-74 for consistency with the State agency's nomenclature.

141, 415, and 564 through 570 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.[18]

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, the grading and construction of development in Planning Areas 3 and 4 would alter the natural visual characteristics of the Project site and incrementally increase lighting levels which would constitute unavoidable significant impacts. In conjunction with the certification of FEIR 589, the County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations. This Statement of Overriding Considerations would continue to apply to this Addendum for the Planning Areas 3 and 4 Master Area Plans, Subarea Plans, and associated approvals.

Finding of Consistency With Final EIR 589

As discussed above, the construction of development in Planning Areas 3 and 4 would alter the visual characteristics of the Project site and would incrementally increase lighting levels. These have been identified as unavoidable significant impacts. However, these findings are consistent with the conclusions of FEIR 589. When certifying FEIR 589, the County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations addressing these impacts. This Statement of Overriding Considerations would continue to apply to this Addendum for Planning Areas 3 and 4.

The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.2 AGRICULTURE AND FORESTRY RESOURCES

Summary of Previous Findings

As detailed in FEIR 589, implementation of the Rancho Mission Viejo Planned Community would result in a significant impact due to the conversion of farmland listed as “Prime”, “Unique”, or “Statewide Importance”, as shown on the State Farmland Mapping and Monitoring Program (FMMP). These farmlands are collectively known as “Important Farmland”. The specific agricultural uses that will be affected by the Rancho Mission Viejo Planned Community include citrus and avocado orchards, limited row crops, and commercial nursery operations. At the time FEIR 589 was prepared, the site was zoned for agriculture and portions of the site were within Williamson Act contracts. In conjunction with FEIR 589, the Orange County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations for impacts to Important Farmland.

[18] As noted in the beginning of the RCM, subsequent Board of Supervisor actions and other agency actions have also been approved that supersede or superimpose the original Board of Supervisor action and have resulted in modifications to mitigation measures. Specifically, Mitigation Measure 4.10-1 was eliminated due to the overlap with Mitigation Measure 4.9-28 (Items 140-141); lighting is being shielded for habitat protection, not aesthetic reasons. From an aesthetics perspective, the impact remains significant and unavoidable.

Project Impact Analysis

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion forest land to no-forest use?

Agricultural resources impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to the State and County CEQA Guidelines. As discussed below, the State FMMP has been updated since the certification of FEIR 589. This Addendum to FEIR 589 documents the consistency of the previous analysis with the updated mapping.

For CEQA purposes, Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are collectively defined as “Important Farmland”. Grazing Land is also considered farmland, although it is not included as Important Farmland. FEIR 589 identified that the Rancho Mission Viejo Planned Community contained 319 acres of Prime Farmland, 61 acres of Farmland of Statewide Importance, and 576 acres of Unique Farmland (identified collectively as “Important Farmland”). Within Planning Areas 3 and 4, FEIR 589 identified impacts to 515.1 acres and 88.4 acres of Important Farmland, respectively. This assumed complete removal of these resources within the development area. This is consistent with the proposed Master Area Plan and Subarea Plans. A review of the 2010 State Farmland Mapping and Monitoring Program indicates that the areas designated as Important Farmland have not changed since the 2002 mapping used in FEIR 589. Therefore, the impacts would remain the same. As indicated above, this was identified in FEIR 589 as a significant, unavoidable impact and a Findings of Fact and a Statement of Overriding Considerations was adopted.

FEIR 589 identified significant impacts associated with development on land within a Williamson Act contract. This includes portions of Planning Areas 3 and 4. However, these contracts subsequently expired in 2006 and 2008. As a result, there are no portions of Planning Areas 3 and 4 or any of the Rancho Mission Viejo Planned Community that are under a Williamson Act contract. No impact would occur.

Forestry Resources were not a topic that required evaluation at the time FEIR 589 was prepared. However, there are no forestry resources within the Rancho Mission Viejo Planned Community.

Improvements within Caltrans Right-of-Way

None of the existing property within the Caltrans jurisdiction is designated as Important Farmland. However, the location where the Cow Camp Road connection is proposed is adjacent to Important Farmland (both Prime and Farmland of Statewide Importance). Should it be determined during the design process that additional right-of-way is required and that the Important Farmland adjacent to SR-74 would be affected by roadway improvements, the amount of Important Farmland would be minimal. This would not be a new impact because this segment of SR-74 is within the development area for Planning Area 4. The evaluation of farmland in FEIR 589 assumed impact to all Important Farmland within the development area. Additionally, the County of Orange has already adopted a Findings of Fact and a Statement of Overriding Considerations pertaining to the impact on farmland. No further action by Caltrans pertaining to impacts to Important Farmland would be required because the County of Orange has made this finding as it pertains to the Rancho Mission Viejo Planned Community.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community, including the construction of Planning Areas 3 and 4. The Project would not result in any new impacts to agricultural and forestry resources, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Though mitigation measures for agricultural resources were identified for the Rancho Mission Viejo Planned Community, none of the mitigation measures are applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

FEIR 589 concluded that the Rancho Mission Viejo Planned Community had significant unavoidable impacts to Prime Farmland. A Findings of Fact and a Statement of Overriding Considerations were adopted by the County Board of Supervisors in conjunction with the certification of FEIR 589. This Statement of Overriding Considerations would continue to apply to this Addendum for the Planning Areas 3 and 4 Master Area Plans, Subarea Plans, and associated approvals.

Finding of Consistency With Final EIR 589

As discussed above, construction of development in Planning Areas 3 and 4 would have impacts to Prime Farmland. However, the impacts are consistent with the findings of FEIR 589. The County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations pertaining to unavoidable significant impacts to Prime Farmland. The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.3 AIR QUALITY

Summary of Previous Findings

FEIR 589 addressed the construction and operational impacts associated with the Rancho Mission Viejo Planned Community. FEIR 589 identified short-term, construction-related emissions of carbon monoxide (CO), volatile organic compounds (VOC), oxides of nitrogen (NOx), and particulate matter (PM10) in excess of the South Coast Air Quality Management District's (SCAQMD's) daily significance thresholds and quarterly significance thresholds. Construction activities would result in a significant direct air quality impact for CO, NOx, VOC, and PM10 (NOx and VOC are ozone precursors). Heavy-duty equipment emissions were calculated using the then-current (2004) emissions assumptions for construction equipment. However, the mitigation measure in FEIR 589 committed to having off-road diesel equipment comply with emission control regulations in force at the time of construction.

In addition to construction emissions, FEIR 589 found that the Rancho Mission Viejo Planned Community operational emissions of CO, VOC, NOx, and PM10 on a regional scale would result in significant direct and cumulative impacts based on SCAQMD thresholds of significance.

FEIR 589 also found the following:

- Local operational impacts would be less than significant. The FEIR 589 analysis showed that 1-hour and 8-hour CO concentrations at all analyzed intersections would be less than State and federal standards.

- The operations of the Rancho Mission Viejo Planned Community are not expected to expose a substantial number of people to objectionable odors.

- The Rancho Mission Viejo Planned Community would not conflict with or obstruct implementation of the Air Quality Management Plan because implementation of the proposed Rancho Mission Viejo Planned Community would not exceed growth projections for the subarea.

In conjunction with certification of FEIR 589, the Orange County Board of Supervisors adopted a Finding of Fact and a Statement of Overriding Considerations for air quality impacts.

Project Impact Analysis

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

b) Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

d) Would the project expose sensitive receptors to substantial pollutant concentrations?

e) Would the project create objectionable odors affecting a substantial number of people?

The air quality impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. As discussed below, since the certification of FEIR 589 State and regional air quality plans have been updated. This Addendum to FEIR 589 documents the consistency of the previous analysis with the updated documents. The modifications to the assumptions for Planning Areas 3 and 4 relative to the evaluation in FEIR 589 would not substantially change the conclusions. The earthwork quantities for Planning Area 3 have increased, but the overall earthwork assumptions for the Rancho Mission Viejo Planned Community would not be increased because the Settlement Agreement has reduced or eliminated other areas of planned construction (ROSA 2005).[19] From a long-term operational perspective, the amount of development and trip generation associated with the Rancho Mission Viejo Planned Community will not have changed from what was assumed in FEIR 589. Overall, the air quality impacts associated with the Project are not expected to change substantially from what was addressed in FEIR 589.

Since the certification of FEIR 589, the South Coast Air Quality Management District (SCAQMD) adopted the *Final 2007 Air Quality Management Plan* (2007 AQMP). The 2007 AQMP was an update of the 2003 AQMP. Importantly, the 2007 AQMP has incorporated the projected growth for the Rancho Mission Viejo Planned Community which, in turn, has been included in the *2007 State Implementation Plan* (SIP). The California Air Resources Board (CARB) adopted the State Strategy for the 2007 State Implementation Plan (SIP), including the 2007 AQMP on September 27, 2007.

On November 28, 2007, CARB submitted a SIP revision to the U.S. Environmental Protection Agency (USEPA) for ozone (O_3), fine particulate matter with a diameter of 2.5 microns or less (PM2.5), carbon monoxide (CO), and nitrogen dioxide (NO_2) in the South Coast Air Basin (SoCAB); this revision is identified as the "2007 South Coast SIP". The 2007 AQMP/2007 South Coast SIP demonstrates attainment of the federal PM2.5 standard in the SoCAB by 2014 and attainment of the federal 8-hour O_3 standard by 2023. The SIP also includes a request to reclassify the O_3 attainment designation from "severe" to "extreme". The USEPA approved the redesignation effective June 4, 2010. The extreme designation requires the attainment of the 8-hour O_3 standard in the SoCAB by June 2024.

On December 7, 2012, the SCAQMD adopted the 2012 AQMP, which is a regional and multi-agency effort (among the SCAQMD, CARB, the Southern California Association of Governments [SCAG], and the USEPA). The 2012 AQMP incorporates the latest scientific and technical information and planning assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS); updated emission inventory methods for various source categories; and SCAG's latest growth forecasts. The 2012 AQMP continues to demonstrate attainment of the federal 24-hour PM2.5 standard by 2014; it updates the USEPA approved 8-hour O_3 control plan with new measures; and it includes new demonstrations of 1-hour O_3 attainment and vehicle miles traveled emissions offsets in accordance with recent USEPA requirements. The 2012 AQMP builds upon the approaches taken in the 2007 AQMP for the SoCAB for the attainment of federal particulate matter (PM) and O_3 standards within the timeframes allowed under Federal Clean Air Act.

The Rancho Mission Viejo Planned Community Plan is consistent with regional and State air quality planning programs. The proposed Master Plans for Planning Areas 3 and 4 would not

[19] FEIR 589 assumed development in Planning Areas 6, 7, and 9 and the associated grading activities. As a result of the ROSA the only development in these Planning Areas will be 25 acres in Planning Area 7 for the relocation of the RMV Headquarters Facilities. Additionally, the development area in Planning Area 8 has been restricted to 500 acres and Planning Subareas 1.3 and 1.5 will not be developed. All these factors will reduce the expected earthwork quantities.

result in any new impacts, nor would they increase the severity of a previously identified significant impact as analyzed in FEIR 589.

The Project region, the Orange County portion of the South Coast Air Basin, is a nonattainment area for O_3, PM10, and PM2.5. FEIR 589 found that the Rancho Mission Viejo Planned Community operational emissions of O_3 precursors VOC and NOx, and PM10 on a regional scale would result in significant cumulative impacts based on SCAQMD thresholds of significance. As previously discussed, the overall trip generation would not be changed substantially from what was assumed in FEIR 589. Therefore, the proposed Master Plans for Planning Areas 3 and 4 would not result in any new cumulatively considerable impacts, nor would they increase the severity of the previously identified significant cumulative impact as analyzed in FEIR 589.

Sources that could expose sensitive receptors to substantial pollutant concentrations include construction activities for PM10 and diesel exhaust (a toxic air contaminant) and congested traffic conditions for CO. Implementation of dust control measures required by SCAQMD rules and compliance with the mitigation measure in FEIR 589 requiring off-road diesel equipment to comply with emission control regulations in force at the time of construction would ensure that exposure to PM10 and diesel exhaust would be less than significant. The overall trip generation would not be changed substantially from what was assumed in FEIR 589; therefore, there would be no increase in the severity of local CO concentrations, confirming the FEIR 589 conclusion that 1-hour and 8-hour CO concentrations at all analyzed intersections would be less than State and federal standards.

There would be no changes in the proposed Master Plans for Planning Areas 3 and 4 that would change the FEIR 589 conclusion that Project operations are not expected to expose a substantial number of people to objectionable odors.

Improvements within Caltrans Right-of-Way

The air emissions associated with the improvements at SR-74 have been assumed in the overall totals for the Rancho Mission Viejo Planned Community. None of the improvements (i.e., two intersections [potentially roundabouts] and a signal) would result in substantial grading or other construction-related emissions. The connection of Cow Camp Road would provide a parallel route for SR-74, which would serve to reduce congestion, thereby incrementally reducing emissions of several criteria pollutants. Therefore, no significant air quality impacts within Caltrans right-of-way are anticipated.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community, including the implementation of Planning Areas 3 and 4. The Project would not result in any new air quality impacts, nor would it increase the severity of a previously identified significant impact as analyzed in FEIR 589. The mitigation program adopted as part of FEIR 589 incorporates measures to reduce impacts during construction, including Fugitive Dust (SC-4.7-1) and ROC and NOx emissions (SC 4.7-2) and a Diesel-Fuel Reduction Plan (MM 4.7-1). No new mitigation is required. Please refer to Items 555 through 556.3 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

As set forth in FEIR 589, short-term, construction-related emissions of nitrogen oxides (NO_X), CO, volatile organic compounds (VOCs), and respirable particulate matter with a diameter of

10 microns or less (PM10) generated during a peak construction period would remain significant after mitigation. The Rancho Mission Viejo Planned Community would not result in significant local operational air quality effects or odor impacts. Consistent with the findings of FEIR 589, long-term operational emissions of CO, VOC, NOx, and PM10 would remain significant and unavoidable. The Project would not conflict with the SCAQMD AQMP. These conclusions are consistent with the findings of FEIR 589 and were included in the Findings of Fact and Statement of Overriding Considerations adopted by the Board of Supervisors on November 8, 2004. The Statement of Overriding Considerations would continue to apply to this Addendum for the Planning Areas 3 and 4 Master Area Plans, Subarea Plans, and associated approvals.

Finding of Consistency With Final FEIR 589

As discussed above, construction of development in Planning Areas 3 and 4 would result in short-term, construction-related emissions of nitrogen oxides (NO_X), CO, volatile organic compounds (VOC), and respirable particulate matter with a diameter of 10 microns or less (PM10) generated during a peak construction period which would remain significant after mitigation. Additionally, long-term operational emissions of CO, VOC, NO_X, and PM10 would remain significant and unavoidable. However, these findings are consistent with the conclusions of FEIR 589. When certifying FEIR 589, the County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations addressing these impacts. This Statement of Overriding Considerations would continue to apply to this Addendum for Planning Areas 3 and 4.

The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.4 BIOLOGICAL RESOURCES

Summary of Previous Findings

FEIR 589 identified significant impacts, prior to mitigation, on a number of sensitive species and vegetation communities. Impacts to USACE and CDFW jurisdictional areas were also identified. Implementation of the Rancho Mission Viejo Planned Community would have short-term construction-related impacts and long-term indirect impacts. Short-term effects are related to noise impacts on nesting raptors and other sensitive bird species and grading activities that would disturb soils and result in the accumulation of dust on the surface of the leaves of trees, shrubs, and herbaceous plants. Grading activities would also result in an accumulation of trash and debris. These short-term impacts were identified in FEIR 589 as significant.

Long-term indirect effects would include the introduction of landscape materials that have the potential to include planting ornamental species that can be invasive; changes in water quality that can impact biological resources; the addition of lighting in development areas that could result in an indirect effect on the behavioral patterns of nocturnal and crepuscular (i.e., active at dawn and dusk) wildlife adjacent to these areas; and increases in human activity that would increase the disturbance of natural open space adjacent to development. These long-term indirect impacts were identified in FEIR 589 as significant.

Implementation of the mitigation program, which includes the preservation of 16,915 acres of open space (almost all to be included in the Habitat Reserve), would reduce biological impacts to less than significant levels except for those impacts associated with two slope wetlands in the Chiquita sub-basin; wildlife linkages K and G; and fecal coliform pathogen impacts. These impacts remained significant and unavoidable and a Findings of Fact and a Statement of Overriding Considerations were adopted for impacts to Biological Resources.

Given the timing of the public release of Draft FEIR 584, the document addressed a Rancho Mission Viejo Planned Community development scenario (identified as Alternative B-12, see Section 2.3) that was agreed to as part of the Settlement Agreements. Therefore, the impacts associated with the Rancho Mission Viejo Planned Community identified in FEIR 584, though similar in nature, are reduced from what was identified in FEIR 589. The mitigation program included the protection of habitat as part of the Habitat Reserve and the Habitat Reserve Management Program. These provisions have been incorporated into the Incidental Take Permits (ITP) issued to RMV. No significant unavoidable biological impacts were identified in FEIR 584.

Project Impact Analysis

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Services?

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Services?

c) Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Would the project conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impacts to biological resources within the proposed Planning Areas 3 and 4 and the associated infrastructure facilities (roads, water, wastewater, and drainage improvements)—including most special status plant and wildlife species and vegetation communities and habitats of concern—were previously analyzed in FEIR 589. Additionally, they were incorporated into the analysis for the Southern Subregion Natural Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan (Southern Subregion NCCP/MSAA/HCP) and its associated Joint Programmatic Environmental Impact Report [FEIR 584]/Environmental Impact Statement (EIR/EIS) that the U.S. Fish and Wildlife Service (USFWS) relied upon for Biological Opinion/Conference Opinion 1-6-07-F-812.8. The USFWS used these documents before issuing the Incidental Take Permit (ITP) pursuant to Section 10(a)(1)(B) of the Federal Endangered

Species Act (FESA) for the HCP component of the SSHCP. FEIR 589, FEIR 584 and the ITP provide for mitigation for impacts in the Rancho Mission Viejo Planned Community, as well as other planned development activities and infrastructure in the SSHCP area, primarily through the preservation, monitoring, and management of an approximate 32,000-acre Habitat Reserve.

Though impacts on biological resources were previously analyzed as part of FEIR 584 and FEIR 589, minor additions and/or clarifications are needed to make the previous document adequate to cover the actions that are currently proposed. Specifically, several additional wildlife and plant species that are now designated as Special Status, and that may occur in the Rancho Mission Viejo Planned Community area, were not analyzed in FEIR 584 and FEIR 589; these are documented below, and this section serves as an Addendum to FEIR 584 and FEIR 589. This analysis was prepared by Dudek & Associates (Dudek 2014).The lists of Special Status plant and wildlife species analyzed for the Project have been updated based on the following criteria:

- State- and federally listed plant species
- The California Native Plant Society's (CNPS') California Rare Plant Rank (CRPR) 1B, 2, 3, and 4 species
- The CDFW's Special Animals list
- The California Natural Diversity Database (CNDDB)
- Plants without CNPS or CDFW designations, but considered rare in Orange County and that were analyzed in the SSHCP and its Joint Programmatic EIR/EIS.

Vegetation Communities of Concern

The total Project-related impacts, as well as the impact assumptions in the SSHCP are summarized in Table 4. It should be noted, that the Project impacts include the required infrastructure improvements located outside the development area. This would include portions of Cow Camp Road; "K" Street in its entirety; the Zone 3 reservoir east of Planning Area 3; and other infrastructure improvements associated with water, wastewater, and drainage facilities.

TABLE 4
VEGETATION COMMUNITY AND LAND COVER IMPACTS FOR PLANNING AREAS 3 AND 4 AND ASSOCIATED IMPROVEMENTS[a] COMPARED TO SOUTHERN SUBREGION HABITAT CONSERVATION PLAN PLANNING AREAS 3 AND 4 AND ASSOCIATED IMPROVEMENTS ANALYSIS

Conserved Vegetation Communities	Planning Areas 3 and 4 Improvements Total Permanent Impact (acres)	Planning Areas 3 and 4 Improvements Total Temporary Impact (acres)[b]	SSHCP Assumptions for Planning Areas 3 and 4 Improvements Total Permanent Impact (acres)	SSHCP Assumptions for Planning Areas 3 and 4 Improvements Total Temporary Impact (acres)[c]
coastal sage scrub	794.5	1.3	1,053.9	3.4
chaparral	557.9	0.0	840.9	1.4
grassland	243.7	2.7	258.4	2.0
riparian	52.4	4.4	63.5	1.0
freshwater marsh	1.0	0.0	1.0	0.0
alkali meadow	0.0	0.1	0.0	0.0
open water	2.2	0.3	2.2	0.3
woodland and forest	161.9	1.1	207.7	1.3
Subtotal	*1,813.6*	*9.9*	*2,427.6*	*9.4*

TABLE 4
VEGETATION COMMUNITY AND LAND COVER IMPACTS FOR PLANNING AREAS 3 AND 4 AND ASSOCIATED IMPROVEMENTS[a] COMPARED TO SOUTHERN SUBREGION HABITAT CONSERVATION PLAN PLANNING AREAS 3 AND 4 AND ASSOCIATED IMPROVEMENTS ANALYSIS

Conserved Vegetation Communities	Planning Areas 3 and 4 Improvements Total Permanent Impact (acres)	Planning Areas 3 and 4 Improvements Total Temporary Impact (acres)[b]	SSHCP Assumptions for Planning Areas 3 and 4 Improvements Total Permanent Impact (acres)	SSHCP Assumptions for Planning Areas 3 and 4 Improvements Total Temporary Impact (acres)[c]
Other Land Cover				
developed	155.8	3.0	211.4	2.8
disturbed	84.1	2.3	86.9	4.5
agriculture	660.5	3.5	616.9	4.0
Subtotal	*900.4*	*8.8*	*915.2*	*11.3*
Grand Total	***2,714.0***	***18.7***	***3,342.8***	***20.7***

SSHCP: Southern Subregion Habitat Conservation Plan

[a] The Planning Areas 3 and 4 Project includes the land use development in these two planning areas and the associated improvements addressed in this Addendum (i.e., roads, water reservoir, and infrastructure) that are located outside the development areas. The water reservoir and pipeline impacts were developed using a conceptual grading plan for the Zone 2 reservoir site adjacent to Planning Area 2. Other conceptual water and sewer line connections are the same as analyzed in the SSHCP, with the exception of deleting a pump station between Planning Areas 2 and 3 near Cañada Gobernadora. Another change includes the fact that the Planning Area 4 development area is 515 acres, or 35 acres less than the maximum total 550 acres of permanent development impact assumed in the SSHCP.

[b] Temporary impacts are associated with the bridges, water reservoir, and pipelines located outside the development area. Although the bridges have not been fully designed, they will be supported by piers that will have permanent impacts, but for the purpose of this impact analysis, they are considered to be de minimus. The SSHCP, for example, assumed 0.06 acre of impact to the stream course for the piers of the two bridges over San Juan Creek, an acreage below rounding error for the overall impact analysis.

[c] The Planning Area 4 acres are based on the 1,129-acre footprint analyzed in the SSHCP; this, as the SSHCP indicated, "represents an overstated impact scenario" (County of Orange 2006d). This conservation approach was necessary because the SSHCP assumed a maximum development footprint of 550 acres, but the exact location of the development was unknown at the time. Therefore, the SSHCP conservation analysis assumed greater impacts to biological resources than would ultimately occur.

Source: Dudek 2014.

Table 4 shows a permanent impact footprint of 2,714 acres. However, implementation of the Project will ultimately permanently impact approximately 2,700 acres. The 14-acre difference is associated with the required open space setback required as part of the ROSA and provided for in the SSHCP that will be provided along San Juan Creek in Planning Areas 3 and 4. The required 200-meter setback area is not precisely defined at this time; therefore, the 2,714 acres is an overstated impact that provides flexibility in siting the open space setback. Of the overstated 2,714 acres of permanent impacts, approximately 1,813.6 acres consist of natural vegetation communities (also referred to as "Conserved Vegetation Communities" in the SSHCP) and 900.4 acres consist of non-natural land covers (i.e., developed, disturbed, and agriculture). (The open space setback is addressed in Items 487, 488, 499 and 500 of the RCM provided in Appendix A)

The Project will also result in generally smaller impacts in the Habitat Reserve than analyzed in the SSHCP. Overall, permanent infrastructure impacts would occur to 14.0 acres under the Project compared to 29.8 acres analyzed in the SSHCP. Temporary impacts would also be reduced under the Project—18.7 acres compared to 20.7 in the SSHCP.

Four vegetation communities of concern occur in the Project Area: coastal sage scrub, grassland, riparian and freshwater marsh, and woodland and forest. Each of these vegetation communities are discussed below and the impacts are shown in Table 4.

Following the discussion of the vegetation communities, the impacts on the Special Status species that utilize these communities are presented in Tables 5 and 6.

- Coastal sage scrub supports a rich diversity of wildlife species, including birds, mammals, reptiles, and invertebrates. Due to loss and fragmentation as a result of urbanization, coastal sage scrub was the focus of the initial NCCP planning efforts and is a Conserved Vegetation Community in the SSHCP. The Project area would result in permanent impacts to 794.5 acres and temporary impacts to 1.3 acres of coastal sage scrub (temporary impacts are associated with the construction of the bridges and water reservoir and pipelines). This is less than the 1,053.9 acres assumed in the SSHCP for the development of improvements associated with the implementation of Planning Areas 3 and 4. Mitigation for impacts to coastal sage scrub is addressed by preservation, management, and monitoring of the SSHCP Habitat Reserve.

- Grassland in Southern California have been threatened by disturbance of clay soils by agricultural activities; invasion of exotic species; grazing; and urban development. Of particular concern is the needlegrass grasslands, which is a component of the grassland Conserved Vegetation Community in the SSHCP. The Project would result in permanent impacts to 8.3 acres of needlegrass grassland. Mitigation for impacts to grasslands, including needlegrass grassland, is addressed by preservation, management, and monitoring of the SSHCP Habitat Reserve.

- Riparian and freshwater marsh vegetation communities in Southern California are directly threatened by conversion to other uses. Riparian is the exclusive habitat of several State- and/or federally listed Threatened and Endangered species. Freshwater marsh provides valuable nesting and foraging habitat for several Special Status species. The Project would result in permanent impacts to 52.4 acres and temporary impacts to 4.4 acres of riparian habitat. The Project would also result in permanent impacts to 1.0 acre of freshwater marsh. This is less than the 63.5 acres of impact to riparian and equal to the 1.0 acre of impact to freshwater marsh assumed in the SSHCP for the development of improvements associated with the implementation of Planning Areas 3 and 4.

  Riparian and freshwater marsh are both Conserved Vegetation Communities in the SSHCP. Mitigation for impacts to riparian and freshwater marsh is addressed by preservation, management, and monitoring of the SSHCP Habitat Reserve. Riparian and freshwater marsh (where jurisdictional) are also addressed in the U.S. Army Corps of Engineers' *San Juan Creek and Western San Mateo Creek Watersheds Special Area Management Plan* pursuant to Section 404 of the Clean Water Act and the CDFW Master Streambed Alteration Agreement pursuant to the Section 1600 of the *California Fish and Game Code.*

- Woodlands and forest areas provide habitat for a variety of species. The Project would result in permanent impacts to 161.9 acres and temporary impacts to 1.1 acres of woodland and forest habitat. This is compared to the 207.7 acres of impacts assumed in the SSHCP for the development of improvements associated with the implementation of Planning Areas 3 and 4.

  Woodland and forest is a Conserved Vegetation Community in the SSHCP and mitigation for impacts to oak woodlands is addressed by preservation, management, and monitoring of the SSHCP Habitat Reserve.

Special Status Species

The wildlife and plant species analyzed for the Planning Areas 3 and 4 Project are listed in Tables B-1 and B-2, respectively (Appendix B). Both tables include the species' primary habitat associations and their known occurrence or potential to occur in the broader SSHCP study area and within the Project area. Species in the Tables B-1 and B-2 in boldface are SSHCP Covered Species and species in shaded rows are species that were not analyzed in the SSHCP and EIR/EIS, but are included in the present analysis.

Special Status Wildlife

Table 5 shows the documented wildlife special-status species occurrences in the Planning Areas 3 and 4 Project area.[20] Overall, the Project would have slightly smaller impacts to a few of Special Status wildlife species locations compared to the SSHCP, including California gnatcatcher *Polioptila californica californica*), grasshopper sparrow *(Ammodramus savannarum*), least Bell's vireo (*Vireo bellii pusillus*), rufous-crowned sparrow (*Aimophila ruficeps canescens*), and orangethroat whiptail(*Aspidoscelis hyperythra*). The only increase in an impact to a wildlife Special Status species with the Project (compared to the SSHCP) is temporary bridge impacts to one yellow warbler location.

Special-status wildlife in Table B-1 that were not previously analyzed in the SSHCP and associated FEIR 584 generally occur in the same habitats as the species that were previously analyzed. The following are additional Special Status species that have moderate or high occurrence in the Project area and that could be directly impacted by the Project:

- **Oak titmouse (*Baeolophus inornatus*), Nuttall's woodpecker (*Picoides nuttallii*), and chipping sparrow (*Spizella passerine*).** All three species are relatively common in riparian and woodland and forest habitats. The Habitat Reserve will ultimately preserve approximately 3,060 acres of riparian and 1,750 acres of oak woodland habitats. The permanent loss of 52.4 acres of riparian and of 161.9 acres of woodland and forest due to the Project would be less than significant with preservation and management of these Conserved Vegetation Communities in the Habitat Reserve.

- **Costa's hummingbird (*Calypte costae*).** This species has moderate potential to nest in coastal sage scrub and chaparral in Project area. The Habitat Reserve will ultimately preserve approximately 11,920 acres of coastal sage scrub and 7,140 acres of chaparral. The loss of 794.5 acres of coastal sage scrub and 557.9 acres of chaparral due to the Project would be less than significant with preservation and management of these Conserved Vegetation Communities in the Habitat Reserve.

- **Oregon vesper sparrow (*Pooecetes gramineus affinis*) and mountain plover (*Charadrius montanus*).** These species may winter in the Project area and forage in grassland and agriculture. The Habitat Reserve will ultimately include approximately 5,570 acres of grassland. In addition, approximately 975 acres of agriculture will be maintained. The permanent loss of 243.7 acres of grassland and 660.5 acres of agriculture due to the Project would be less than significant with preservation and management of these grassland and agriculture in the Habitat Reserve. Habitat value from temporary impacts

[20] Table 4 lists Special Status wildlife species that have been documented in the Planning Areas 3 and 4 Project area. A variety of other Special Status wildlife species listed in Table B-1 have not been documented within the Planning Areas 3 and 4 Project area but either have been documented in the SSHCP study area or have moderate or high potential to occur in the SSHCP study area and Project area based on the presence of suitable habitat and information about their geographic range and habitat use patterns contained in the scientific literature.

to grassland (2.7 acres) and agriculture (3.5 acres) will be restored following Project completion.

- **Bats, including silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasiurus blossevillii*), hoary bat (*Lasiurus cinereus*), fringed myotis (*Myotis thysanodes*), and pocketed free-tailed bat (*Nyctinomops femorosaccus*).** All of these bats are expected to forage in most natural communities and agricultural areas when and where insect prey are available although different species may have different preferred habitats (see Primary Habitat Associations in Table B-1). Therefore the 32,000-acre Habitat Reserve will mitigate for impacts to 2,471.1 acres of potential foraging habitat (i.e., all vegetation and land covers excluding 155.8 acres of developed and 84.1 acres of disturbed) and impacts would be less than significant. Silver-haired bat, western red bat, and hoary bat are primarily "tree roosting" bats and may occasionally roost in riparian or (oak) woodland and forest habitat in the Project area during the winter season. However, western red bat and hoary bat are migrants that are not expected to establish maternity roosts in the Project area. Silver-haired bats typically establish maternity roosts in old growth forest and large trees (greater than 50 feet), which are lacking in the Project area. Fringed myotis and pocketed free-tailed bat primarily roost in rocks, crevices, cliff structures, and man-made structures (e.g., buildings, bridges), which are not present in the Project area. Therefore, the Project would not have significant impacts on important roosting sites for Special Status bats.

Some additional Special Status wildlife in Table B-1 that were not previously analyzed in the SSHCP and Joint Programmatic EIR/EIS could be indirectly affected due to noise or lighting by the bridge crossing at Cañada Gobernadora (Cow Camp Road and "K" Street) and the bridge crossing at San Juan Creek (Cow Camp Road). These are primarily birds that nest in marsh and associated riparian and communities and that generally occur in the same habitats as species that were previously analyzed in the SSHCP (i.e., least Bell's vireo, southwestern willow flycatcher, yellow warbler, yellow-breasted chat, white-tailed kite, and tricolored blackbird). These species include American bittern (*Botarus lentiginosus*), least bittern (*Ixobrychus exilis*), and black-crowned night heron (*Nycticorax nycticorax*). Noise and/or lighting at bridge crossings could inhibit these species from nesting near the bridges in otherwise suitable habitat.

The Habitat Reserve will ultimately include at least 1,255 acres of riparian habitat (89 percent of the total in SSHCP area) and at least 16 acres of freshwater marsh (84 percent of the total in SSHCP area). Preservation and management of these Conserved Vegetation Communities in the Habitat Reserve will offset any potential indirect effects on American bittern, least bittern, and black-crowned night heron; these potential indirect effects would be less than significant.

TABLE 5
SPECIAL STATUS WILDLIFE IMPACTS FOR PLANNING AREAS 3 AND 4 PROJECT AND SOUTHERN SUBREGION HABITAT CONSERVATION PLAN PLANNING AREAS 3 AND 4 IMPROVEMENTS ANALYSIS

Special Status Species[a]	Planning Areas 3 and 4 Improvements Total Permanent Impact (acres)	Planning Areas 3 and 4 Improvements Total Temporary Impact (acres)[b]	SSHCP Assumptions for Planning Areas 3 and 4 Improvements Total Permanent Impact (acres)	SSHCP Assumptions for Planning Areas 3 and 4 Improvements Total Temporary Impact (acres)[c]
cactus wren	63	0	63	0
California gnatcatcher	18	0	19	0
Cooper's hawk	1	0	1	0
grasshopper sparrow	54	0	54	0
least Bell's vireo	0	0	1	0
rufous-crowned sparrow	50	1	52	1
white-tailed kite	1	0	1	0
yellow-breasted chat	4	0	4	0
yellow warbler	0	1	0	0
arroyo toad[b]	Present	0	Present	0
coastal whiptail	4	0	4	0
orangethroat whiptail	36	0	38	0
San Diego horned lizard	1	0	1	0
western pond turtle	2	0	2	0
western skink	1	0	1	0
San Diego desert woodrat	2	0	2	0

SSHCP: Southern Subregion Habitat Conservation Plan

[a] SSHCP Covered Species are shown in **boldface**. Common names may be slightly different from those in the SSHCP due to changes in naming conventions.

[b] Arroyo toad is shown simply as present because the number of occurrence locations do not reflect the actual population due to congregations of various numbers of toads around breeding sites.

Source: Dudek 2014.

Special Status Plants

Focused surveys for rare plants documented the occurrence of eight Special Status plants in the Project area, which are identified in Table 6.[21] Except for many-stemmed dudleya, all impacts to documented Special Status plants resulting from the Project would be the same as analyzed in the SSHCP. For many-stemmed dudleya, 5 locations totaling 407 individuals that would have been impacted by "K" Street will not be impacted due to relocation of the bridge crossing. Impacts

[21] Table 5 lists special-status plant species that have been documented in the Planning Area 3 and 4 Project area. Table B-2 lists additional special-status plants analyzed for the SSHCP, but based on the comprehensive plant surveys conducted in the Project vicinity over several years, these plants are not expected to occur or be affected by the Planning Areas 3 and 4 Project.

to the species listed in Table 6 were addressed in the SSHCP and Joint Programmatic EIR/EIS and were all assumed to be permanently impacted as a result of development of Planning Areas 3 and 4 and its associated infrastructure improvements. These impacts were assumed to be mitigated by preservation, management, and monitoring of the 32,000-acre Habitat Reserve.

TABLE 6
SPECIAL STATUS PLANT IMPACTS FOR PROPOSED PLANNING AREAS 3 AND 4 PROJECT AND THE SOUTHERN SUBREGION HABITAT CONSERVATION PLAN PLANNING AREAS 3 AND 4 ANALYSIS

Special Status Species*		Planning Areas 3 and 4 Improvements	SSHCP Assumptions for Planning Areas 3 and 4 Improvements
Catalina mariposa lily	Sites	6	6
	Population	21	21
	Acres	0.19	0.19
Intermediate mariposa lily	Sites	78	78
	Population	8,293	8,293
	Acres	36.64	36.64
Many-stemmed dudleya	Sites	77	82
	Population	6,326	6,733
	Acres	20.22	20.35
Palmer's grapplinghook	Sites	40	40
	Population	3,370	3,370
	Acres	2.82	2.82
Piper's rein orchid	Sites	1	1
	Population	6	6
	Acres	0.17	0.17
Salt Spring checkerbloom	Sites	1	1
	Population	3	3
	Acres	0.06	0.06
Small-flowered microseris	Sites	5	5
	Population	25	25
	Acres	0.32	0.32
Vernal barley	Sites	6	6
	Population	5,389	5,389
	Acres	0.45	0.45

SSHCP: Southern Subregion Habitat Conservation Plan; PAs: Planning Areas

* The SSHCP Covered Species many-stemmed dudleya is shown in **boldface**.

Source: Dudek 2014.

Several Special Status plants in Table B-2 were not previously analyzed in the SSHCP and Joint Programmatic EIR/EIS. These species are not expected to occur in the Project area for at least one or more of three reasons:

1. **The species is a narrow endemic with a restricted geographic range fairly distant from the Project area.** This category includes Munz's onion (*Allium munzi*), Rainbow manzanita (*Arctostaphylos rainbowensis*), Santa Rosa basalt brodiaea

(*Brodiaea santarosae*), Pendleton button celery (*Eryngium pendletonensis*), Tecate cypress (*Hesperocyparis forbesii*),[22] and Nuttall's scrub oak (*Quercus dumosa*).

2. **The Project area does not support suitable habitat.** This category includes Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*), lemon lily (*Lilium parryi*), prostrate vernal pool navarretia (*Navarretia prostrata*), and San Bernardino aster (*Symphyotrichum defoliatum*).

3. **The species most likely would have been detected during rare plant surveys.** This category includes long-spined spineflower (*Chorizanthe polygonoides* var. *longispina*), Mesa horkelia (*Horkelia cuneata* ssp. *puperula*), Ramona horkelia (*Horkelia truncate*), California satintail (*Imperata brevifolia*), Allen's pentachaeta (*Pentachaeta aurea* ssp. *allenii*), roundleaved filaree (*California macrophylla*), and white rabbit-tobacco (*Pseudognaphalium leucocephalum*).

Therefore, the proposed Project would not have significant impacts on any of the Special Status plant species that were not previously analyzed in the SSHCP and Joint Programmatic EIR/EIS.

Southern Subregion Habitat Conservation Plan Habitat Reserve Design

The Project would not adversely affect the Habitat Reserve design analyzed in the SSHCP. The Planning Area 3 development footprint is the same as analyzed in the SSHCP, and the Planning Area 4 development footprint is 35 acres smaller than the maximum 550 acres allowed in the SSHCP and is contained within the 1,129-acre planning area analyzed in the SSHCP.[23]

The Zone 3 water reservoir in the Habitat Reserve next to Planning Area 3 is in the same location as the tank site analyzed in the SSHCP, although the conceptual footprint has been modified to reflect the best available information (utilizes the concept from the Planning Area 2 Zone 2 site) to estimate a more realistic ultimate grading footprint. The diagonal northwest-southeast crossing of Cañada Gobernadora by the conceptual "K" Street has been replaced by the more direct east-west "K" Street crossing that will be a bridge in the Habitat Reserve. The Cow Camp Road alignment connecting Planning Area 2 and Planning Area 3 has been shifted to the north, resulting in less permanent impact to the Habitat Reserve. These changes in the spatial arrangement of impacts will not adversely affect the Habitat Reserve with respect to Reserve design and wildlife dispersal and movement (including habitat blocks and habitat linkages) and, overall, will result in fewer impacts to the Habitat Reserve.

Exhibit 23 depicts the phased dedication of open space associated with the development of each of the subareas. This approach is consistent with the provisions of the ITP and with the 2006 Open Space Agreement with the County of Orange. The overall development and open space phasing for Planning Area 3 is summarized in Table 7. Table 8 provides a breakdown of the vegetation community for both the developed area and the open space areas for each of the Planning Area 3 subareas. Additionally, it provides a breakdown of by Conserved Vegetation Community and non-Conserved land cover types.

Tables 9 shows the Planning Area 4 development and open space by Conserved Vegetation Community and non-Conserved land cover type. It should be noted, in Table 9 the open space total of 1,009 acres and individual acreages for the vegetation communities identified do not reflect the up to 175 acres allocated for a reservoir that is an approved Covered Activity for SMWD

[22] This species would have been detected if present.

[23] As discussed in Section 2.7.2, the amount of open space in Planning Area 4 was increased in conjunction with the minor amendment to the SSHCP associated with the design plans for "F" Street.

in the SSHCP, and which could occur anywhere within the 1,009-acre provisional "open space" area outside the 515-acre development area. If the full 175 acres is developed for the reservoir, the remaining Planning Area 4 open space would total approximately 834 acres, but the mix of vegetation and land covers in open space is unknown at this time. Under any scenario, however, coastal sage scrub would be conserved in open space at a minimum 2.2:1 ratio (i.e., 494 acres–175 acres = 319 acres/143 acres of development) and chaparral would be conserved at a minimum 1.2:1 ratio (i.e., 368 acres–175 acres = 193 acres/159 acres of development).

TABLE 7
SUMMARY OF PLANNING AREA 3 DEVELOPMENT AND OPEN SPACE PHASED DEDICATION

	Planning Area 3 Development		Planning Area 3 Open Space	
Development Phase (Subarea)	**Phase Impact (acres)**	**Cumulative Impact (acres)**	**Open Space by Phase (acres)**	**Cumulative Open Space (acres)**
3.1	257	257	148	148
3.2	269	525	174	322
3.3	252	778	260	582
3.4	252	1,030	252	834
3.5	177	1,207	487	1,321
3.6	335	1,542	752	2,073
3.7	319	1,862	453	2,526
3.8	324	2,185	248	2,774
Total	**2,185**		**2,774**	

Source: Dudek 2014.

TABLE 8
PLANNING AREA 3 DEVELOPMENT AND OPEN SPACE PHASED DEDICATION
BY VEGETATION COMMUNITY AND LAND COVER

Vegetation Community/Land Cover	3.1		3.2		3.3		3.4		3.5		3.6		3.7		3.8		Grand Total	
	Dev	OS	Dev	OS	Dev	OS	Dev	OS	Dev	OS	Dev	OS	Dev	OS	Dev	OS	Dev	OS
Conserved Vegetation Community																		
Coastal Sage Scrub	47	48	103	6	115	46	90	134	37	130	78	587	143	230	36	106	648	1,288
Chaparral	5		55		78	1	37	88	28	151	60	75	132	124	1	1	397	440
Grassland	32	28	7	7		2	1	5	24	66	45	41	28	28	59	13	197	191
Alkali Meadow			0	7		11				0	0				0	1	0	19
Riparian	8	37	6	113	0	15	5	1	7	59	4	33	1	20	16	81	47	358
Marsh		3		3					1	1					0		1	7
Woodland & Forest	21	7	24	4	11	5	10	22	1	76	16	16		51	11	21	101	201
Open water	0	17							1						0	7	2	24
Non-Conserved Land Cover																		
Agriculture	105	2	47	14	37	122	108	2	77		131		9		93	4	608	144
Disturbed	28		27	20	10	58	0								18		83	78
Developed	12	5							0	4	0				90	15	102	24
Grand Total	**257**	**148**	**269**	**174**	**252**	**260**	**252**	**252**	**177**	**487**	**335**	**752**	**319**	**453**	**324**	**248**	**2,185**	**2,773**
Cumulative Total	**257**	**148**	**525**	**322**	**778**	**582**	**1,030**	**833**	**1,207**	**1,320**	**1,542**	**2,072**	**1,862**	**2,526**	**2,185**	**2,773**		

DEV=development area; OS=open space area

Source: Dudek 2014.

TABLE 9
PLANNING AREA 4 DEVELOPMENT and OPEN Space

Vegetation Community/Land Cover	Planning Area 4 Development (acres)[a]	Planning Area 4 Open Space (acres)[b]	Total
Conserved Vegetation Communities			
Coastal Sage Scrub	143	494	637
Chaparral	159	368	527
Grassland	46	82	128
Riparian	5	10	15
Woodland & Forest	39	68	113
Non-Conserved Land Covers			
Agriculture	51	0	51
Developed	52	0	52
Grand Total	**515**	**1,009**	**1,524**

[a] The 515 acres of development does not reflect a setback in Planning Area 4 adjacent to San Juan Creek to ensure that width of the creek between Planning Area 3 and Planning Area 4 is a least 1,320 feet. Per the SSHCP this setback would be also be enrolled as open space.

[b] The open space total and acreages for the vegetation communities do not reflect up to 175 acres of reservoir that is an approved Covered Activity in the SSHCP, as described in the text.

Source: Dudek 2014

Mitigation Program

As a part of FEIR 584 and FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 584 and FEIR 589. The Project would not result in any new impacts to biological resources, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 584 and FEIR 589. No new mitigation is required. Please refer to Items 121 through 167 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

Through implementation of the mitigation program, impacts to coastal sage scrub, chaparral, grassland, riparian, and woodland and forest vegetation communities would be reduced to a level considered less than significant. Impacts to sensitive species would be reduced to a level considered less than significant through implementation of the SSHCP Habitat Reserve and mitigation program set forth in FEIR 584 and FEIR 589. Measures specifically applicable to Planning Areas 3 and 4 and associated improvements are presented in Appendix A of this Addendum.

With the proposed mitigation program, implementation of Planning Areas 3 and 4 and its associated improvements would not result in any new impacts, nor would it increase the severity of a previously identified significant impact as analyzed in FEIR 584 and FEIR 589. In certifying FEIR 589, the Board of Supervisors made a finding that the Rancho Mission Viejo Planned Community would result in unavoidable significant biological impacts to two slope wetlands in the

Cañada Chiquita sub-basin and to Wildlife Linkages K (Trampas Canyon, located south of Ortega Highway) and G (Chiquidora Ridge and Gobernadora Creek, located west of Planning Area 3);. A Statement of Overriding Considerations was adopted by the Orange County Board of Supervisors in conjunction with the certification of FEIR 589. However, the modifications to the Rancho Mission Viejo Planned Community as a result of the ROSA was able to reduce these biological impacts to a level of less than significant. Therefore, the Planning Areas 3 and 4 Project would not contribute to significant, unavoidable impacts on biological resources.

Finding of Consistency With Final EIR 584 and FEIR 589

As discussed above, construction of development in Planning Areas 3 and 4 would result in impacts to coastal sage scrub, chaparral, grassland, riparian, freshwater marsh, alkali meadow, open water, and woodland and forest vegetation communities and the sensitive species that utilize these habitats. Through implementation of the mitigation program adopted in association with the Rancho Mission Viejo Planned Community FEIRs 584 and 589, which includes the dedication and preservation of open space and implementation of the SSHCP Habitat Reserve, these impacts have been reduced to less than significant.

The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 584 or FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 584 and FEIR 589.

4.5 CULTURAL/SCIENTIFIC RESOURCES

Summary of Previous Findings

FEIR 589 addressed the potential significant impacts on cultural resources associated with the construction of the Rancho Mission Viejo Planned Community. FEIR 589 addressed the maximum environmental impact by assuming any archaeological resources located within the development areas of the Rancho Mission Viejo Planned Community would be eliminated through grading and construction activities. Direct impacts on archaeological sites that are either eligible or potentially eligible for the National Register of Historic Places (NRHP) and/or the California Register of Historic Resources (CRHR) were identified. Through implementation of various project design features, standard conditions, and a mitigation program, impacts were reduced to less than significant levels.

Project Impact Analysis

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5?

b) Would the project cause a substantial adverse changed in the significance of an archaeological resource pursuant to Section 15064.5?

c) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Would the project disturb any human remains, including those interred outside of formal cemeteries?

The cultural/scientific resources impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. A mitigation measure in FEIR 589 required the preparation of a Cultural Resources Management Program as part of the Master Plan for each planning area. The *Cultural Resources Management Program for PA 3 and PA 4 Master Area Plans* was prepared by Archaeological Resource Management Corporation in October 2014 (ARMC 2014). This document is summarized below and included in Appendix C.

Archaeological Resources

Development in Planning Area 3 would impact a total of five prehistoric sites. Of these, only two sites (CA-ORA-1121 and CA-ORA-1565) were identified in FEIR 589 as eligible for both the NRHP and the CRHR under Criterion D. Mitigation measure (MM) 4.11-3 requires a Cultural Resources Management Program for those sites that are eligible for both the NRHP and the CRHR. This program, which is provided in Appendix C, develops a data recovery strategy that together with the County of Orange standard condition (SC) 4.11-1 would mitigate impacts to CA-ORA-1121 and CA-ORA-1565 to a less than significant level.

Site CA-ORA-1121 was previously impacted by the SMWD Talega Valley Reclaimed Water Pipeline. Prior to construction, test level investigations were carried out at the site (Demcak et al. 1989), and the site was deemed significant. A subsequent data recovery program was carried out within the pipeline construction limits on the site in 1990 (Jones et al. 1995) followed by monitoring during construction in 1991 and 1992 (Julien and Demcak1993). The site was effectively destroyed by the pipeline construction; no intact deposit is likely to be present. Thus monitoring during construction is the recommended mitigation.

The proposed data recovery programs at CA-ORA-1565 sites will be executed in two phases. Phase I will consist of manual excavation of a series of test units randomly placed within the recorded site area. During Phase II mechanical excavation will be used to identify and fully expose features. Following the data recovery at the site, the artifacts, ecofacts, and features will be analyzed, and comparative studies will be undertaken.

Because FEIR 589 anticipated that these two sites would be impacted as a part of the Rancho Mission Viejo Planned Community, implementation of Planning Area 3 would not result in any new impacts, nor would it increase the severity of a previously identified significant impact as analyzed in FEIR 589. In conjunction with the preparation of FEIR 589, field surveys and/or testing was conducted on the three additional prehistoric sites in Planning Area 3 (CA-ORA-1566, CA-ORA-1122, and CA-ORA-1123) and it was determined that these three sites were ineligible for the NRHP and the CRHR. FEIR 589 did not identify any prehistoric sites in Planning Area 4; however, because of the archaeological sensitivity of the areas adjacent to Planning Area 4, the plan of mitigation will consist of monitoring during construction to guard against inadvertent impacts to unknown resources.

Because the cultural resources evaluation prepared for FEIR 589 was also used for the SSHCP and SAMP programs, the cultural resources analysis was been prepared consistent with the standards for CEQA and NEPA, and to meet the requirements of Section 106 of the National Historic Preservation Act. As part of the cultural resources evaluation process there was consultation with the Native American Heritage Commission and the Juaneño Band of Mission Indians, Acjachemen Nation. Maps and letters regarding the project were sent to three representatives of the Juaneño Band in February and March 2000. Consultation was also conducted as a part of the Section 106 process to determine the significance of resources. Senate Bill (SB) 18 requires Native American consultation when approving, or processing an amendment

to, a General Plan or Specific Plan. Approval of a Master Plan does not meet the requirements for consultation; therefore, further consultation is not required at this time.

FEIR identified that during grading activities there is the potential for discovery of archaeological resources, including human remains interred outside of formal cemeteries. The County of Orange standard conditions of approval addresses this potential impact. The measure is consistent with Section 7050.5 of the State Health and Safety Code that further requires if the remains are thought to be Native American, disturbances to stop and the county coroner be contacted; and Section 5097.98 of the Public Resources Code, that requires the coroner to notify the Native American Heritage Commission (NAHC) if the remains are thought to be Native American. The NAHC will then notify the Most Likely Descendent.

Paleontological Resources

The underlying bedrock in the western $^{2}/_{3}$ of Planning Area 3 is the Santiago Formation. The eastern $^{1}/_{3}$ and the southern portion of Planning Area 3 is composed of older Alluvium and River Terrace Deposits. The Santiago Formation has a high potential for containing significant fossil resources. Because of the high sensitivity of the Santiago Formation, impacts to this formation associated with ground-disturbing activities—including brush clearance and grading—are considered significant. However, with implementation of SC 4.11-2 from the mitigation program adopted as part of the FEIR 589, these impacts would be mitigated to less than significant levels. Implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Historic Resources

Of the five historic sites that would be directly impacted through implementation of the Rancho Mission Viejo Planned Community, none of these sites are located within Planning Areas 3 and 4. Therefore, no significant historic resources impacts would occur with implementation of Planning Areas 3 and 4.

Improvements within Caltrans Right-of-Way

There are no known archaeological or historic sites within Caltrans right-of-way. The mitigation program—which requires monitoring for archaeological, paleontological and historic resources during construction—would also apply to any improvements with Caltrans right-of-way.[24] Therefore, no significant impacts on cultural resources within Caltrans right-of-way are anticipated.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The mitigation program adopted in conjunction with FEIR 589 included the County Standard Conditions of Approval associated with cultural resources (archaeological and paleontological monitoring during grading) and a data recovery plan if the sites cannot be avoided during construction (MM 4.11-3). The Project would

[24] It should be noted that the various cultural resources studies used for FEIR 589 were also the basis for the analysis for the SAMP and its associated EIS prepared by the USACE (see Section 2.4.2 for a discussion of the SAMP). As such, the reports were submitted to the State Historic Preservation Officer (SHPO) as part of the consultation pursuant to Section 106 of the National Historic Preservation Act. The SHPO concurred with the findings of eligibility on January 27, 2004.

not result in any new cultural resources impacts, nor would they increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 170 and 172 through 176 in the RCM in Appendix A to this Addendum for measures applicable Planning Areas 3 and 4.

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, with implementation of the mitigation program provided in Appendix A, the Rancho Mission Viejo Planned Community, which includes Planning Areas 3 and 4, would not result in any significant unavoidable impacts associated with potential impacts to prehistoric archaeological, historical, and paleontological resources.

Finding of Consistency With Final EIR 589

As discussed above, the construction of development in Planning Areas 3 and 4 would result in potential for impacts to prehistoric archaeological and paleontological resources. These issues were addressed in FEIR 589 and a mitigation program was developed to reduce the impacts to less than significant. As indicated above, the mitigation program would be applicable to the Planning Areas 3 and 4.

The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.6 GEOLOGY AND SOILS

Summary of Previous Findings

FEIR 589 addressed the constraints associated with geology and soils on the Rancho Mission Viejo Planned Community site. FEIR 589 identified that:

- The Rancho Mission Viejo Planned Community site is not in a designated Alquist-Priolo Earthquake Fault Zone. No known active or potentially active faults are known to cross the project site. Two inactive faults, the Cristianitos and Mission Viejo Faults, cross the Rancho Mission Viejo Planned Community.
- Because no active or potentially active faults have been mapped on or adjacent to the any of the Rancho Mission Viejo Planned Community development planning areas, the potential for surface displacement is considered to be less than significant.
- Seismic Hazard Zone Maps prepared by the California Geological Survey for the Rancho Mission Viejo Planned Community site indicate that portions of site are within a zone that requires investigation for liquefaction and therefore susceptible to liquefaction. Measures to reduce the potential for liquefaction can be achieved using conventional grading techniques. These methods may include but are not limited to removal and recompaction of soils; deep dynamic compaction; and dewatering.

- Within the development areas there are surficial units that are highly susceptible to erosion. Erodibility can be mitigated during grading using conventional grading techniques (e.g., slope stabilization, construction of drainage devices).
- Collapsible and/or compressible soils are located throughout the planning areas. Removal and compaction of all collapsible or compressible soils would be required in areas to be developed.
- Expansive soils are present in most of the planning areas. Significant impacts associated with the presence of expansive soils in areas to be developed can be remediated with proper foundation design.

FEIR 589 determined that implementation of various project design features, standard conditions, and the adopted mitigation program would reduce the geology and soils impacts to less than significant levels.

Project Impact Analysis

a) Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

b) Would the project result in substantial soil erosion or the loss of topsoil?

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

d) Would the project be located on expansive soils, as defined in Table 18-1-B of the California Building Code (1994), creating substantial risks to life or property?

***e)* Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal system where sewers are not available for the disposal of wastewater?**

The geophysical impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. Minor clarifications are needed to validate that the previous document adequate to cover the actions that are currently proposed, which are documented below and serve as an Addendum to FEIR 589.

Seismic Hazards

Faulting and Seismicity

The Rancho Mission Viejo Planned Community, including proposed Planning Areas 3 and 4, are not in a designated Alquist-Priolo Earthquake Fault Zone. No known active or potentially active faults are known to cross Planning Areas 3 and 4; however, the inactive Mission Viejo Fault crosses the eastern part of Planning Area 3. Additionally, Planning Areas 3 and 4 are located in a seismically active region of Southern California. With implementation of the FEIR 589 mitigation program—which includes SCs 4.4-1 through 4.4-5 and MM 4.4-1—these impacts would be mitigated to a less than significant level. Implementation of Planning Areas 3 and 4 would not result in any new or more severe faulting and seismicity impacts than those assumed in FEIR 589.

Liquefaction

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Liquefaction is induced when, during seismic ground shaking, the soil is subjected to cyclic shear stresses that can cause increased pore-water pressure. Liquefaction causes softening and deformation. FEIR 589 indicated that portions of Planning Areas 3 and 4 are located within areas subject to liquefaction susceptibility. The majority of the alluvial areas in Planning Areas 3 and 4, which are predominately located adjacent to San Juan Creek, are susceptible to liquefaction. Prior to construction, additional field investigation, testing, and analysis is required to address the liquefaction potential. The California Building Code (CBC) site-specific seismic coefficients would also apply in the analysis of liquefaction hazards and the future design of structures. Final design of remedial grading would need to mitigate excessive liquefaction-induced settlement and slope deformation. With implementation of the FEIR 589 mitigation program—which includes SCs 4.4-1 through 4.4-5 and MM 4.4-1—these impacts would be mitigated to a less than significant level. Implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Erosion

Erosion would pose the greatest potential impact during grading. The quantities of grading are slightly higher than what was assumed in FEIR 589. For Planning Area 3, there would be an estimated 85 million cubic yards (cy) of cut and fill grading, which includes remedial grading (51 million cy of mass grading, and 34 million cy of remedial grading). Maximum cut depths would be 155 feet, with maximum fills of 130 feet. For Planning Area 4, grading is estimated at 7 million cy of cut and fill, with maximum cut depths of 105 feet and maximum fills of 63 feet. Though this is greater than the preliminary estimates provided in FEIR 589, the adopted measures to address erosion would remain the same and mitigate potentially significant impacts.[25]

Consistent with FEIR 589, the Planning Areas 3 and 4 Project requires a Storm Water Pollution Prevention Plan (SWPPP) to prevent potential short-term impacts of construction on water quality. Temporary construction erosion and sediment-control Best Management Practices (BMPs) would be used to keep sediment, construction wastes, and vehicle wastes from affecting downstream water bodies. These include but would not be limited to waste and materials management; non-

[25] FEIR 589 identified that there would be approximately 288,461,000 cy of cut and fill (inclusive of remedial grading) required for the Rancho Mission Viejo Planned Community. The FEIR 589 calculated cut and fill for Planning Area 4 using a smaller development footprint (216 acres) than what was ultimately approved. The ROSA established a 550-acre development area for Planning Area 4 (this is in addition to 175 acres allowed for the development of a reservoir by SMWD). FEIR 584 evaluated the "B-12" Alternative developed by the ROSA; however, the grading numbers were not quantified. The totally grading for the Rancho Mission Viejo Planned Community will not exceed the total amount assumed in FEIR 589.

storm water management; training and education; and maintenance, monitoring, and inspection activities.

Consistent with the findings of FEIR 589, long-term, all surficial units are highly susceptible to erosion with the exception of the terrace deposits and the perched soil horizon that caps some of the ridges. Where the Mission Viejo Fault may be exposed in the cut slope, stabilization would be required to mitigate the fractured nature of the bedrock. Cut slopes that expose landslide debris would require stabilization to prevent slope failure. In Planning Area 4, westerly facing cut slopes are expected to require buttressing to mitigate adverse bedding orientations. Corrective grading and slope stabilization can be accomplished using conventional grading techniques. With implementation of the FEIR 589 mitigation program—which includes SCs 4.5-1 through SC 4.5-11 and MMs 4.4-1 through 4.5-8—these impacts would be mitigated to a less than significant level. Implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Landslides

FEIR 589 identified eighteen mapped landslides within Planning Area 3 varying in size from less than one acre to approximately six acres; however, most are less than one acre in size. FEIR 589 indicates that most of the failures are shallow involving native soil, colluvium, and weathered bedrock. Within Planning Area 4, no landslides have been mapped. With implementation of the FEIR 589 mitigation program—which includes SCS 4.4-1 through 4.4-5 and MM 4.4-1—these impacts would be mitigated to a less than significant level. Implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Groundwater

FEIR 589 indicated that, in Planning Area 3, groundwater was located in drill holes in the alluvium in portions of Cañada Gobernadora. Water occurs in laterally discontinuous perched zones in terrace deposits, landslide debris, and bedrock of the Santiago, Silverado, and Williams formations. Additionally, FEIR 589 identified that, in Planning Area 4, groundwater may occur in shallow depths in the major drainages, particularly in the western portion of the planning area adjacent to San Juan Creek. Water may occur in laterally discontinuous perched zones within terrace deposits, landslide debris, and the Williams Formation. Review of available subsurface exploration indicates that no groundwater was encountered in the alluvium south of Ortega Highway. No groundwater data is available for Planning Area 4 north of Ortega Highway. With implementation of the FEIR 589 mitigation program—which includes SCs 4.4-1 through 4.4-5 and MM 4.4-1—these impacts would be mitigated to a less than significant level. Implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Slope Stability

FEIR 589 indicated that, for cut slopes in Planning Area 3, the following geologic constraints exist: (1) the bedrock units within Planning Area 3 generally dip gently to the west; (2) most of the planning area is underlain by sandstone of the Santiago Formation; (3) the Mission Viejo Fault crosses the eastern portion of the site; and (4) scattered small landslides have been mapped within the planning area. For Planning Area 4, FEIR 589 indicated that (1) bedrock units within Planning Area 4 generally dip gently to the west and (2) most of the planning area is underlain by sandstone of the Williams Formation. Cut slopes that are affected by these constraints would likely require stabilization or buttressing. As indicated above, westerly facing cut slopes in both planning areas would likely require buttressing to mitigate adverse bedding orientations. Cut slopes that expose sandstone would likely require stabilization or buttressing to prevent erosion

or raveling of the slope face. In areas where the Mission Viejo Fault may be exposed in the cut slope, stabilization will likely be required to mitigate the fractured nature of the bedrock. Cut slopes that will expose landslide debris and sandstone would require stabilization with conventional grading techniques to prevent slope failure. With implementation of the FEIR 589 mitigation program—which includes SCs 4.4-1 through 4.4-5 and MM 4.4-1—these impacts would be mitigated to a less than significant level. Implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Settlement

As indicated in FEIR 589, collapsible soils and/or compressible soils were encountered during surface mapping throughout Planning Areas 3 and 4. In Planning Area 3, the native soil, non-engineered fill, alluvium, slopewash, landslide debris, lake deposits, perched soils, portions of the terrace deposits and landslide debris, and weathered portions of the bedrock are generally considered to be collapsible or compressible; in Planning Area 4, the native soil, alluvium, slopewash, portions of the terrace deposits, and weathered portions of the bedrock are generally considered to be collapsible or compressible. In the areas of planned development, removal and recompaction of all collapsible/compressible soils is recommended.

In addition, isolated areas of undocumented fill materials occur throughout Planning Area 3. These fills generally occur along existing ranch roads, within some of the tributary canyons, and in pockets within the southern portion of the planning area, just north of the San Juan Creek drainage. Undocumented fill is likely to be within the nursery and industrial areas in the southern and southeastern portions of Planning Area 3. Undocumented fill would be removed to expose competent, dense, native materials and be replaced with engineered fill within areas of planned development. In Planning Area 4, isolated areas of undocumented fill materials may occur and generally occur along existing ranch roads or in small, isolated pockets within the site. As with Planning Area 3, areas of undocumented fill in Planning Area 4 would be removed to expose competent, dense, native materials and replaced with engineered fill within areas of planned development. With implementation of the FEIR 589 mitigation program—which includes SCs 4.4-1 through 4.4-5 and MM 4.4-1—these impacts would be mitigated to a less than significant level. Implementation of the Planning Areas 3 and 4 Project would not result in any new or more severe impacts than those assumed in FEIR 589.

Soil Expansion and Corrosion

As indicated in FEIR 589, soils generated from excavations of the native soil, slopewash, landslide debris, lake deposits, and perched soils would likely be expansive. Small areas of Planning Area 3 are underlain by the Silverado Formation, portions of which may also be expansive. In Planning Area 4, soils generated from excavations of the native soil and slopewash would likely be expansive; however, the bedrock would not. Final recommendations for soil expansion and corrosion would be provided during the Project's final design phase. With implementation of the FEIR 589 mitigation program—which includes SCs 4.4-1 through 4.4-5 and MM 4.4-1—these impacts would be mitigated to a less than significant level. Implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Septic Tanks/Alternative Disposal Systems

The Planning Areas 3 and 4 Project would connect to the existing wastewater system that is within the Santa Margarita Water District's service area. Refer to Section 4.17, Utilities and Service Systems, for additional information on wastewater service. The Project does not propose or require the use of septic tanks, alternative disposal systems, or a sewer system.

Improvements within Caltrans Right-of-Way

The area of improvements along SR-74 is generally mapped as alluvium. Extensive grading would not be required within the Caltrans right-of-way, nor would there be the need to construct structures (i.e., bridges) within the right-of-way. Standard engineering practices would minimize the potential geotechnical constraints associated with the Project. With implementation of the FEIR 589 mitigation program—which includes SCs 4.4-1 through 4.4-5 and MM 4.4-1—potential impacts would be mitigated to a less than significant level. Therefore, no significant impacts associated with geology and soils within Caltrans right-of-way are anticipated

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any new impacts associated with geology and soils, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 6 through 14 and 521 through 526 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, with implementation of the mitigation program provided in Appendix A, the Rancho Mission Viejo Planned Community, which includes Planning Areas 3 and 4, would not result in any significant unavoidable impacts associated with geology and soils.

Finding of Consistency With Final EIR 589

As discussed above, with the development in Planning Areas 3 and 4 there would be geotechnical constraints associated with seismic hazards, erosion, landslides, groundwater, slope stability, settlement, and soil expansion and corrosion. These issues were addressed in FEIR 589 and a mitigation program was developed to reduce the impacts to less than significant. As indicated above, the mitigation program applicable to Planning Areas 3 and 4.

The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.7 GREENHOUSE GAS EMISSIONS

At the time of certification of FEIR 589 for the Rancho Mission Viejo Planned Community, a Greenhouse Gas (GHG) Emissions analysis was not part of the required CEQA Checklist.

Project Impact Analysis

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Master Plan and Subarea Plans for Planning Areas 3 and 4 would implement a component of the previously approved Rancho Mission Viejo Planned Community based on FEIR 589, which was certified on November 8, 2004. Effective March 18, 2010, the State of California adopted amendments to the State CEQA Guidelines requiring the analysis and mitigation of the effects of GHG emissions in CEQA documents. The new State CEQA Guidelines regarding GHG emissions do not specifically address situations involving subsequent implementing actions for a project with a previously certified FEIR.

FEIR 589 is a "program EIR" as defined in CEQA and the State CEQA Guidelines (see State CEQA Guidelines, Section 15168) in that it covers one large project with several phases or components that require a series of implementing actions. Pursuant to CEQA and the State CEQA Guidelines, subsequent activities in implementing the approved Rancho Mission Viejo Planned Community that are subject to further discretionary approvals by the County are to be examined by the County pursuant to the three-part test set forth in Section 15162(a) of the State CEQA Guidelines.[26]

GHG emissions and global climate change is not "new information" since these effects have been generally known for quite some time. Therefore, for the Master Plan and Subarea Plans Project, GHG emissions would not be considered new information under Section 21166 of CEQA. The Master Plan and Subarea Plans Project would simply implement a component of a previously approved project (the Rancho Mission Viejo Planned Community) and would not allow for any new development or uses beyond that previously authorized.

A 2010 decision by the Fourth District of the California Court of Appeals is also instructive and confirms that, after an initial EIR is certified, CEQA establishes a presumption against additional environmental review.[27] In the *San Diego Navy Broadway Complex Coalition v. City of San Diego,* case, the court held that the City of San Diego was not required to prepare a subsequent EIR (SEIR) regarding the potential impact of a redevelopment project on global climate change because the City action did not constitute a discretionary approval that would provide it with the authority to address the project's impact on that environmental issue. Opponents of the redevelopment project had argued that an SEIR was required to address the project's GHG emissions because that issue had not been examined in the project's previously certified FEIR.

The court in the Navy Broadway Complex case determined that the key question was whether the City had any remaining authority to shape the project in a way that could respond to any of the concerns that might be identified in an SEIR; that is, would the City have the authority to require the project proponent to mitigate the environmental damage to some degree. The court

[26] Section 1.0 of this Addendum provides the citation from Section 15162(a) of the State CEQA Guidelines, which explains the three-part test for determining if a subsequent EIR (SEIR) is required.

[27] See *San Diego Navy Broadway Complex Coalition v. City of San Diego,* 185 Cal App 4th 924 (2010).

ultimately found that the scope of the City's remaining authority, which was principally related to an aesthetic issue, did not extend to potential impacts on global climate change. The City did not have the authority to modify the project so as to reduce its impact on global climate change.

The circumstances related to the Rancho Mission Viejo Planned Community are similar to those presented in the Navy Broadway Complex case in that the County of Orange has limited discretion with regard to subsequent Rancho Mission Viejo Planned Community. Pursuant to Section 15162(a) of the State CEQA Guidelines, the County's discretion with regard to additional environmental review is limited to determining whether any of the three triggering conditions would require the preparation of a SEIR.

In a 2011 case, *Citizens for Responsible Equitable Environmental Development v. City of San Diego*,[28] the Fourth District Court of Appeal affirmed the trial court's denial of a petition for writ of mandate challenging the City of San Diego's adoption of an addendum to a previously certified EIR rather than the preparation of an SEIR for a development project. In one of many issues, the court found that "information on the effect of greenhouse gas emissions on climate was known long before the City approved the 1994 FEIR". The court discussed several federal court decisions that demonstrated information about the nexus between GHG emissions and climate change was known well before the 1994 FEIR was certified. As such, the effect of GHG emissions on climate change could have been raised in 1994 when the City certified the FEIR. Because the plaintiff in this case provided no competent evidence of new information of a significant impact, it did not meet its burden under Section 21166 of CEQA to demonstrate that an SEIR was required. Therefore, this case supports an agency's decision that an SEIR is not required based on the general issue of GHG emissions and climate change, where an earlier certified FEIR for the project did not address climate change.

A 2014 decision by the Sixth District Court of Appeals in *Citizens Against Airport Pollution v. City of San Jose* is consistent with the cases described above. The decision states, "Thus, information about the potential environmental impact of greenhouse gas emissions was known or could have been known at the time the 1997 EIR and the 2003 SEIR for the Airport Master Plan were certified. We reiterate, . . . an agency may not require an SEIR unless '[n]ew information, which was not known and could not have been known at the time the [EIR] was certified as complete, becomes available.'" Since the potential environmental impact of GHG emissions does not constitute new information as defined in in the CEQA statutes, Section 21166, subdivision (c), the City did not violate Section 15064.4 of the State CEQA Guidelines by failing to analyze greenhouse gas emissions in the eighth addendum.

Assuming that the first and second conditions have not occurred (i.e., that the Master Plan and Subarea Plans Project would not result in substantial changes to the Rancho Mission Viejo Planned Community and that there have not been substantial changes in circumstances, such that new or more severe environmental impacts require major revisions to FEIR 589), the issue is simply whether GHG emissions constitute "new information" under Section 15162(a) of the State CEQA Guidelines. This approach has been used by the Orange County Planning Commission for the approval of the previous Addenda for the Rancho Mission Viejo Planned Community and other developments with an FEIR that was certified prior to the requirement of the GHG analysis. As noted above, a factual finding can be made by the County that such emissions do not constitute new information. Therefore, no further analysis of this topic is required.

[28] *Citizens for Responsible Equitable Environmental Development v. City of San Diego* (2011) 196 Cal. App.4th 515.

Improvements within Caltrans Right-of-Way

As discussed in the impact analysis, GHG emissions is not "new information" and the courts have found with a phased project an analysis of GHG emissions is not required. By the nature of GHG emissions, an evaluation of impacts within the Caltrans right-of-way is not applicable and these emissions do not constitute new information. It should be noted that the mitigation measures used to reduce AQ emissions would also reduce GHG emissions

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community, including the construction of Planning Areas 3 and 4. Specific measures were adopted that would minimize air quality impacts. These measures would also serve to reduce GHG emissions. Implementation of Planning Areas 3 and 4 would not result in any new GHG impacts, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 555 through 556.3 in the RCM in Appendix A to this Addendum for air quality measures applicable Planning Areas 3 and 4.

4.8 HAZARDS AND HAZARDOUS MATERIALS

Summary of Previous Findings

As part of FEIR 589, Phase I Environmental Site Assessments (ESAs) were prepared for each of the development areas to assess the possible presence of recognized environmental conditions within the Rancho Mission Viejo Planned Community's development areas. A range of issues were identified, including risks associated with residual pesticides; potential demolition of buildings containing asbestos-containing materials and lead-based paint; potential of contamination in the vicinity of aboveground tanks (AGT) and underground storage tanks (UST); minor surface soil staining; contamination associated with past lease and agricultural operations; and potential damage or disturbance to abandoned oil wells.

The hazards section of FEIR 589 also evaluated wildland fire hazards. An Adaptive Management Program, which includes a *Wildland Fire Management Plan,* was developed in conjunction with the Rancho Mission Viejo Planned Community. This plan outlines management requirements for the extensive open space provided as part of the Rancho Mission Viejo Planned Community and provide protection of both the approved development and the sensitive habitat within the Southern Subregion HCP. Additionally, a *Ranch Plan Planned Community-Wide Fire Protection Plan* has been developed in conjunction with the Orange County Fire Authority (OCFA) and approved by the Orange County Board of Supervisors, thus providing a comprehensive approach to the processing of all emergency access and fire safety issues associated with proposed development within the Rancho Mission Viejo Planned Community.

With implementation of the project design feature, standard condition of approval, and the mitigation measures, impacts due to hazardous materials and wildland fires would be reduced to a level considered less than significant.

Project Impact Analysis

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

e) Would the project be located within an airport land use plan or, where such plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

f) For a project within the vicinity of private airstrip, would the project result in a safety hazard for people residing or working in the project area?

g) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

h) Would the project expose people or structures to a significant risk or loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Environmental Equalizers, Inc. (EEI) prepared the initial Phase I Environmental Site Assessments for Planning Areas 3 and 4 as part of the preparation of FEIR 589. The following potential issues were identified:

- Agricultural operations have been ongoing in the Planning Areas; therefore, there is the potential for pesticides in these areas.
- Both Planning Areas have structures that were constructed prior to 1980 that may contain asbestos and lead-based paint.
- Within Planning Area 3, there were locations with minor surficial oil spills and surface staining within the locations occupied by industrial uses and, east of the Cow Camp maintenance shop area, a site was previously used to bury old materials and discarded scraps. The surface soil staining was characterized as limited in nature and it was determined not be significant adverse impact. Two wildcat well locations were identified; however, neither well produced oil and both had been properly closed pursuant to the requirements of the Department of Conservation, Division of Oil, Gas, and Geothermal Resources.
- Several underground storage tanks (UST) are located within the planning areas, including two that are permitted at the Cow Camp (RMV storage/shop). Additional UST were previously within the planning areas but have been removed.

- Neither Planning Area contains hazardous waste sites compiled pursuant to Section 65962.5 of the *California Government Code*.

EEI prepared updated Phase I Environmental Site Assessments in December 2014 and January 2015 for Planning Areas 4 and 3, respectively (See Appendix D). Both reports were updated in February 2015. As part of this effort, EEI contacted the OCFA and County Health Care Agency, the California Department of Toxic Substances Control (DTSC), and State Water Resources Control Board (SWRCB) and reviewed other State and federal databases to determine whether Planning Areas 3 and 4 or any adjacent properties were listed as hazardous waste generators; UST releasers; or properties that have other environmental concerns (i.e., spill, leak, or aboveground tank). The hazardous materials database search radii were consistent with ASTM International's E1527-13 Report entitled *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, and included properties adjacent to the boundaries of Planning Areas 3 and 4. The finding of the studies are provided below.

In February and March 2014, EEI performed a limited agricultural chemical survey to evaluate soil beneath the agricultural portions of the planning areas. A total of 67 discrete soil samples were collected at 6-inches below ground surface (bgs), and were analyzed for Organochlorine Pesticides (57 samples in Planning Area 3 and 10 samples in Planning Area 4). The results of the agricultural chemical testing in Planning Area 3 detected concentrations of Dieldrin in 2 samples, DDT in 11 samples, DDE in 12 samples, total lead in 48 samples, and total arsenic in 53 samples. The `Dieldrin, DDT, and DDE were found at less than the Office of Environmental Health Hazard Assessment (OEHHA) residential screening values. The maximum total arsenic detected in one soil sample in Planning Area 3 matched the background concentration established by DTSC, indicating that none of the analyzed samples exceeded acceptable background conditions for sites occupied by children in the study region. The maximum total lead concentration detected in one soil sample marginally exceeds the OEHHA screening level. Based on these results, no additional investigation appears to be necessary at this time.

In Planning Area 4 agricultural chemical testing indicated no samples analyzed detected any organochlorine pesticides above the laboratory reporting limit. Total lead was reported in 8 samples and total arsenic in all 10 samples. The maximum total lead and maximum total arsenic concentration does not exceed the OEHHA screening established by DTSC, indicating that none of the analyzed samples exceeded acceptable background conditions for sites occupied by children in the study region. No additional investigation appears to be necessary at this time.

In March 2014 and May 2014, EEI conducted a series of soil vapor surveys conducted on existing and former UST locations in Planning Area 3, in an effort to identify potential subsurface vapor contamination that may impact future site development in the areas identified. The specific sites investigated included former UST locations at Cow Camp (including Campo Vaquero and Shop) and Color Spot Nursery, as well as existing UST locations at Catalina Pacific Concrete (CPC) and CR&R/Solag. Based on the results of the soil vapor survey, three samples from the Cow Camp Shop area and one sample from the Campo Vaquero former UST location contained ethylbenzene at concentrations exceeding the OEHHA residential screening value of 420 µg/m^3 and a single sample from the shop area contained xylenes at concentrations exceeding the OEHHA residential screening value of 320,000 µg/m^3. None of the samples collected from CR&R/Solag, CPC, or Color Spot Nursery UST locations exceeded their respective screening levels.

Soil matrix and soil vapor sampling was conducted in the eastern portion of the Cow Camp storage yard (Planning Area 3) in August 2014. The results indicate that soil in one area is impacted with TPH of the diesel and motor oil ranges, which exceeds applicable residential screening levels. In addition, soil vapor concentrations of xylenes exceed the residential screening

levels in three of the areas sampled. Further investigation and/or remedial excavation in these areas prior to development appears to be warranted.

For Planning Area 4, the assessment determined that the potential for vapor encroachment conditions do not and are not likely to exist due to the lack of known or suspected contaminated properties within the planning.

No new areas of concern were identified as part of the updated studies. The testing did not identify residual pesticides that exceed levels established State and federal standards for health-sensitive uses (e.g., residential, schools, child care facilities). Soil gas testing was performed at existing and historic UST locations in Planning Area 3. Minor regulatory exceedances were reported for volatile organic compound (VOC) samples collected around the Cow Camp shop building. No other VOC exceedances were reported for any of the other existing or historic UST locations.

No new impacts are anticipated associated with UST removal; building demolition; past undocumented fill (east of Cow Camp) excavation; or wildcat oil well removal. The buried material (referenced as undocumented fill) appeared to be used in the 1970s for trash as part of normal ranch operations. Soil and soil gas testing conducted in the former burial area revealed limited petroleum hydrocarbon and VOC impacts. The mitigation measures adopted in conjunction with the approval of the Rancho Mission Viejo Planned Community address these issues. The mitigation program (PDF 4.14-1; SC 4.14-1 and SC 4.14-2; and MM 4.14-1 through MM 4.14-14) requires additional testing (1) in those locations with known USTs at the time the tanks are removed; (2) prior to demolition of all facilities constructed prior to 1973 for asbestos and lead-based paint; and (3) associated with the removal of refuse from the undocumented fill area. For those locations with oil wells, final building plans with documentation of any required remedial action will be reviewed by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources. Additionally, the EIR identified the need for the preparation of a Health and Safety Contingency Plan (HSCP) prior to the initiation of grading to protect workers; to safeguard the environment; and to meet the requirements of the *California Code of Regulations* (CCR, Title 8, General Industry Safety Orders – Control of Hazardous Substances).

Consistent with the findings of FEIR 589, there are no locations within the Rancho Mission Viejo Planned Community, including Planning Areas 3 and 4, on the Hazardous Waste and Substance Site List (also known as the Cortese List), which is compiled pursuant to Section 65962.5 of the *California Government Code*. The closest site is the former El Toro Marine Corps Air Station facility in Irvine, which is approximately eight miles north of the Project site. Based on the distance from this site, the Project would not expose the public to hazardous materials associated with the sites on the Cortese List.

No land use compatibility issues were identified related to airports. John Wayne Airport is the closest commercial airport, which is located approximately 18 miles from the Project site. There are no private airstrips in the vicinity of the Project site. Further evaluation of this issue is not required, and no mitigation is necessary.

With respect to emergency access or evacuation plans, this topic was evaluated in Section 4.15, Public Services and Facilities, of FEIR 589 (see pages 4.15-1 through 4.15-10). There are no designated evacuation routes within the Rancho Mission Viejo Planned Community. The construction of “F” Street and Cow Camp Road would improve access to the area, thereby providing an additional route for emergency access and evacuation.

The *Safety Element* identifies the Rancho Mission Viejo Planned Community as being located in a Special Fire Management Zone. Portions of Planning Areas 3 and 4 have been used for agricultural uses and grazing. In these areas, natural vegetation has been removed for crops and

orchard areas, or reduced by grazing activities. In these disturbed locations, the fuel loading has been reduced.

The extension of urban land uses to this area would introduce more people and urban activities into an area that currently has limited accessibility. This can have a positive influence by improving accessibility, reducing fuel loading in the area, and providing improved water availability to the area. However, it also increases the number of structures and people that would be affected by a wildland fire and the potential losses should there be a fire.

The risks associated with exposure of people or structures to a significant risk involving wildland fires, was fully addressed in FEIR 589. Modeling done as part of the *Wildland Fire Management Plan*, which is contained in the Adaptive Management Program (Appendix J of FEIR 589). This information was used in the preparation of the *Ranch Plan Planned Community-Wide Fire Protection Program* approved by the Orange County Board of Supervisors in July 2007 and a Secured Fire Protection Agreement between the Orange County Fire Authority (OCFA) and RMV approved in March 2007. Compliance with these programs and Unified Building Code and OCFA ordinances dealing with the wildland/ urban interface would reduce potential impacts to less than significant. This is consistent with the findings of FEIR 589.

Therefore, implementation of the Project would not result in any new impacts, nor would it increase the severity of impacts previously analyzed in FEIR 589.

Improvements within Caltrans Right-of-Way

None of the locations on SR-74 proposed for improvements are listed on any of the databases searched as part of the Phase I ESA. The improvements within the Caltrans' right-of-way would not pose any new hazards or risks of upset that were not previously analyzed in FEIR 589.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The proposed Project would not result in any new impacts associated with hazardous materials, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 178 through 200 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, with implementation of the mitigation program provided in Appendix A, the Rancho Mission Viejo Planned Community project, which includes Planning Areas 3 and 4, would not result in any significant unavoidable impacts associated with hazardous materials.

Finding of Consistency With Final EIR 589

As discussed above, with the construction of Planning Areas 3 and 4 there would be exposure to hazardous materials associated with construction activities. Additionally, the Project area is designated as a Special Fire Management Zone. These issues were addressed in FEIR 589 and a mitigation program was developed to reduce the impacts to less than significant. As indicated above, the mitigation program would be applicable to Planning Areas 3 and 4.

Pursuant to Section 15162 of the State CEQA Guidelines, the County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since certification of FEIR 589.

4.9 HYDROLOGY AND WATER QUALITY

Summary of Previous Findings

Based on the watershed management measures (project design features, standard conditions, and mitigation measures) adopted in conjunction with FEIR 589, the Rancho Mission Viejo Planned Community would maintain the flow regime and prevent significant impacts during a full range of flow events (2-year, 10-year and 100-year). Proposed detention facilities, in conjunction with the infiltration approach, will reduce post-project flow peaks to the pre-Rancho Mission Viejo Planned Community project level. The size of the detention facilities will comply with County criteria and reduce on- and off-site flood hazards to less than significant. The existing flow regime, especially for the more frequent and channel forming (approximately 2-year events) will be maintained. For larger events, flow peaks will not increase. The *Conceptual Water Quality Management Plan* (WQMP) prepared for the Rancho Mission Viejo Planned Community outlines the site design, source control and treatment systems would provide an effective treatment for most pollutants associated with urbanization. In addition, the proposed features address both dry-weather and wet-weather water quality concerns. With the exception of certain pathogen indicators, potential runoff water quality impacts are considered less than significant with the proposed mitigation features outlined in the WQMP. More detailed WQMPs are developed for each Planning Area.

In conjunction with certification of FEIR 589, the Orange County Board of Supervisors adopted a Finding of Fact and a Statement of Overriding Considerations for water quality impacts (pathogens).

Project Impact Analysis

a) **Would the project violate any water quality standards or waste discharge requirements?**

b) Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or lowering of the local groundwater table level (e.g., the production rate of the pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

c) Would the project substantially alter the existing drainage pattern of the site or area including the alteration of the course of a stream or river, in manner which would result in substantial erosion or siltation on or off-site?

d) Would the project substantially alter drainage patterns of the site or area, including through the alteration of the course of a stream or river, or substantially increase the

rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

e) Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

f) Would the project otherwise substantially degrade water quality?

g) Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

h) Would the project place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

i) Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

j) Would the project be subject to inundation by seiche, tsunami, or mudflow?

The hydrology and water quality impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. The County of Orange has required the preparation of this Addendum as a method of documenting the consistency of the Project with FEIR 589. Additional analysis has been prepared to validate that the Planning Area 3 and 4 Project is substantially consistent with analysis provided in FEIR 589 and that the previous document adequate to cover the actions that are currently proposed.

A Conceptual WQMP for the Rancho Mission Viejo Planned Community was prepared in support of the approvals addressed in FEIR 589. Subsequent WQMP documents are required at the Master Area Plan/Subarea Plan level of approval and again as part of a final Project-specific approval. The *Conceptual Water Quality Management Plan for Planning Areas 3 and 4* (Conceptual WQMP), prepared by RBF Consulting (January 2015), is consistent with the terms and content of the Conceptual WQMP presented in FEIR 589 and is provided in Appendix E. Information from the Conceptual WQMP is summarized below.

Drainage

San Juan Creek flows in a northeasterly to southwesterly direction. San Juan Creek is a major drainage facility that discharges into the Pacific Ocean in the vicinity of the City of Dana Point. Major tributaries to San Juan Creek are Arroyo Trabuco, Oso Creek, Cañada Chiquita, Cañada Gobernadora, Bell Canyon Creek, and Verdugo Canyon Creek. Cañada Gobernadora (which contains Gobernadora Creek) is located within Planning Area 3 and Verdugo Canyon Creek is located in Planning Area 4.

FEIR 589 identified that the development of the Rancho Mission Viejo Planned Community will result in increases in the rate and amount of surface flow runoff within certain portions of the developed watershed(s). In the absence of mitigation, development of the Rancho Mission Viejo Planned Community, including Planning Areas 3 and 4, would alter certain in-channel sediment transport processes, potentially affecting streambed/stream bank stability. As a mitigation measure, FEIR 589 required the preparation of a Runoff Management Plan.

In April 2013 the County of Orange approved the ROMP for the portion of the Rancho Mission Viejo Planned Community within the San Juan Creek watershed.[29] The preliminary storm drainage system was evaluated in the ROMP, which provides the comprehensive watershed planning guidance. This document combines the Runoff Management Plan and the Master Plan of Drainage. On March 13, 2014, the San Diego Regional Water Quality Control Board deemed the mitigative water quality and hydromodification management scheme detailed in FEIR 589, the Ranch Plan ROMP, and the San Juan Creek Watershed Study acceptable.[30] As such this approach is used in the analysis provided in this Addendum to FEIR 589 and the associated supporting studies.

Due to the magnitude of the project area, phasing of development ROMP and drainage for proposed Planning Areas 3 and 4 will be identified after approval of the Master Area Plan with the submittal of more detailed plans. Such a deferral is a policy change requiring approval by the Planning Commission. As a result, subsequent and more detailed ROMP studies will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals. This would address refinements for defining specific land use, grading, and phasing of both development for Planning Areas 3 and 4, together with updated phasing to existing condition of Regional ROMP document. All County standards would be complied with.

As discussed in FEIR 589 and addressed in the ROMP, "the general watershed planning objective on the macro level is to maintain the natural integrity/stability of the regional San Juan Creek system and downstream levels of flood protection through hydrologic mitigation measures, and, at the micro level, is to implement local urban drainage master plans for each of the development planning areas which include water quality mitigation features" (PACE 2013).

The ROMP quantifies the potential runoff at the planning level and defines a plan with various strategies to provide an appropriate level of mitigation in the areas of (1) hydrology, (2) hydraulics, (3) water quality, and (4) stream stability. This planning effort evaluates the stormwater management and flood control mitigation requirements to support and provide guidance for the proposed development. Future refined watershed planning and/or design level engineering will require additional detailed analyses following the County criteria and procedures.

Based on the ROMP and further refined in the Conceptual WQMP prepared for the Master Plan and Subarea Plan level of planning, various regional flood control basins, local flood control basins, and water quality basins are proposed to provide the necessary flood control protection. As shown in Exhibit 8, Preliminary Storm Drainage System, the location of these facilities is in general conformance with the ROMP; however, there are several potential modifications. These modifications, which are outlined below, would be fully addressed as part of the detailed ROMP studies that will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.

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[29] Planning Areas 1 through 5 are located in the San Juan Creek watershed; however, the development of Planning Area 1 had already been initiated at the time the ROMP was prepared. Therefore the ROMP focuses on Planning Areas 2 through 5 and incorporates the facilities identified in the Planning Area ROMP prepared and approved for Planning Area 1.

[30] Section F.1.d(11) of Board Order R9-2009-0002 (see language below) allows the use of master planned regional LID BMPs where a specific set of criteria are met. F.1.d(11) states: F.1.d(11):
Where a development project, greater than 100 acres in total project size or smaller than 100 acres in size yet part of a larger common plan of development that is over 100 acres, has been prepared using watershed and/or sub-watershed based water quality, hydrologic, and fluvial geomorphologic planning principles that implement regional LID BMPs in accordance with the sizing and location criteria of this Order and acceptable to the Regional Board, such standards shall govern review of projects with respect to Section F.1 of this Order and shall be deemed to satisfy this Order's requirements for LID site design, buffer zone, infiltration and groundwater protection standards, source control, treatment control, and hydromodification control standards.

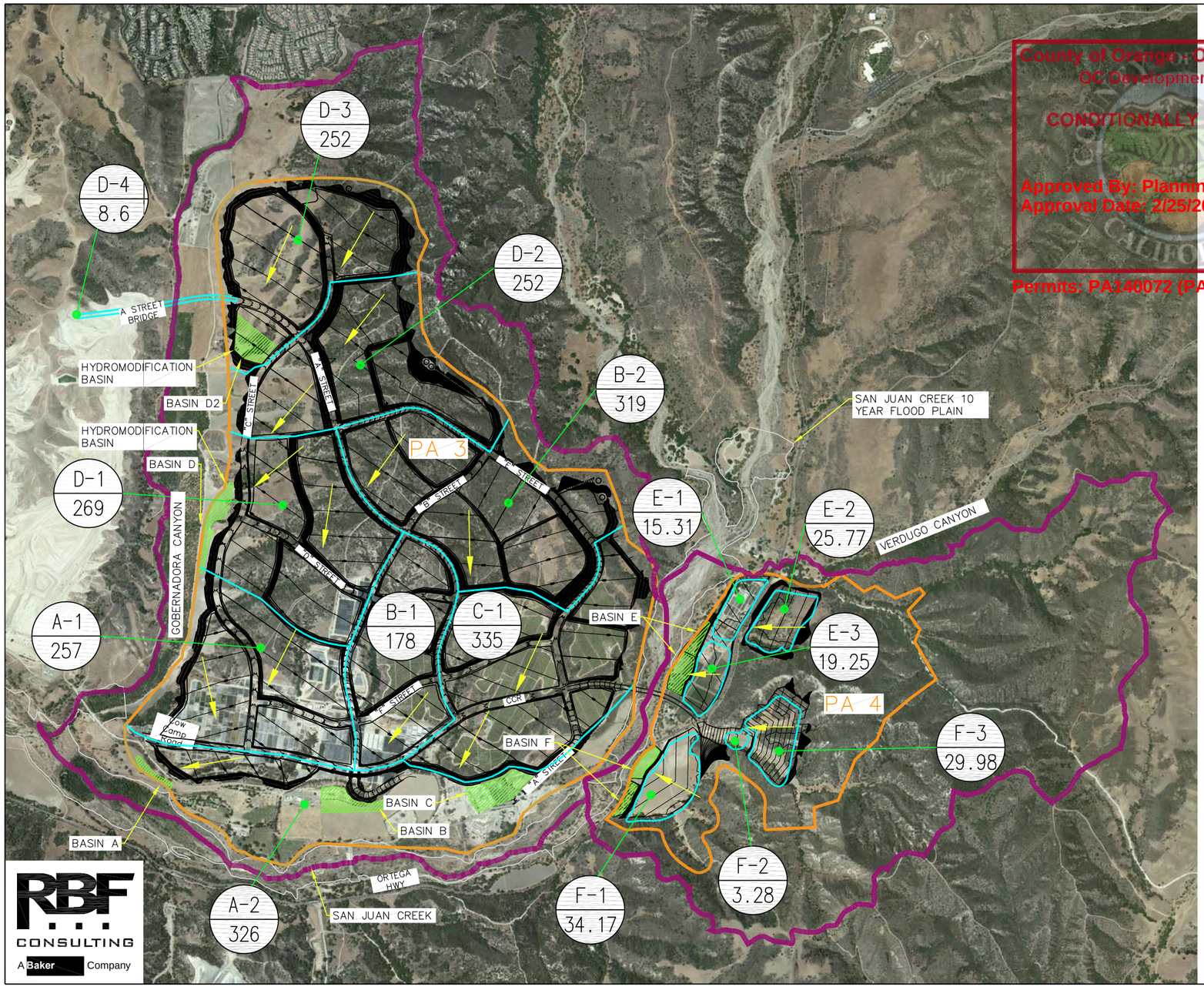
- In Planning Subarea 3.4 an additional hydromodification basin is provided (identified as Basin D2). This basin is over and above what is required by the ROMP and was recommended based on the analysis in the Conceptual WQMP. Since the basin would be constructed completely in the development area, it would not increase the size of the Project footprint. Therefore, the environmental impacts would not be greater than what was addressed in FEIR 589.

- The location of Water Quality Basin C (see Exhibit 9) is different than what was shown in the ROMP. This basin would be comparable to Basin 13 identified in the ROMP (see Figure 11-3 of the ROMP). Based on the conceptual grading plan, the WQMP identified this location; however, as discussed above, the location and sizing will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals. Since the basin would be constructed completely in the development area, it would not increase the size of the Project footprint. Therefore, the environmental impacts would not be greater than what was addressed in FEIR 589.

- There are three basins that are depicted on Exhibit 9 that may not be required for adequate water quality treatment. These basins are depicted on Exhibit 9 as unnamed basins and correspond to Water Quality Basins 10, 17, and 18 in the ROMP (see Figure 11-3 of the ROMP). As with the other deviations from the ROMP, the need for the facilities would be evaluated at the level of Tentative Map approvals and prior to rough grade plan approvals. Since the basin would be constructed completely in the development area, it would not increase the size of the Project footprint. Therefore, the environmental impacts would not be greater than what was addressed in FEIR 589.

As discussed in the Conceptual WQMP, Planning Areas 3 and 4 are segregated into six Subdrainage Areas, Subdrainage Areas A, B, C, D, E and F. Table 10 provides an overview of the proposed land uses by subdrainage area and how the flows will be treated. Energy dissipaters shall be included whenever concentrated flow is discharged into natural streams. Exhibits 8 and 9 depicts the locations of the various conceptual water quality basins, flood-control basins, and outlets. The location of these subdrainage areas and conceptual water quality treatment plan as assessed in the Conceptual WQMP are depicted in Exhibit 24. The precise details on location and sizing of the facilities will be determined as more detailed land use and grading information is available (i.e., tentative tract map).

As discussed in the Conceptual WQMP for Planning Areas 3 and 4, increases in impervious area throughout the development can potentially impact the hydrologic regime of downstream receiving water bodies. These impacts are considered a Hydrologic Condition of Concern (HCOC) if the Project improvements pose significant threats to natural channels or habitat integrity.



LEGEND

DRAINAGE BOUNDARY

IMPACT ANALYSIS AREA

PLANNING AREA

SAN JUAN CREEK 10 YR FLOODPLAIN

FLOW PATH

1A / 2.22 — SUBAREA DESIGNATION / AREA (ACRES)

WATER QUALITY BASIN

2000' 1000' 0 2000'

GRAPHIC SCALE

Source: RBF Consulting 2015

Subdrainage Areas and Conceptual Water Quality Treatment Plan

Exhibit 24

Planning Areas 3 and 4 Master and Subarea Plans

N W E S

Bonterra PSOMAS

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TABLE 10
SUBDRAINAGE AREAS

Drainage Area	Proposed Land Uses	Subdrainage Area Characteristics
Subdrainage Area A	Residential, mixed-use development and schools	This subdrainage Area is comprised of 583 acres and is located in the southern portion of Planning Area 3. A basin will be constructed near the southern portion of Subdrainage Area A in order to provide treatment and runoff attenuation prior to being discharged into San Juan Creek.
Subdrainage Area B	Residential and commercial uses	This subdrainage area is comprised of approximately 497 acres and is located in the middle portion of Planning Area 3. Runoff drains through local storm drain systems and drains to infiltration basins before discharging into San Juan Creek.
Subdrainage Area C	Residential and mixed-use development	This subdrainage area is comprised of approximately 335 acres and is located in the southeastern portion of Planning Area 3. Runoff drains through local storm drain systems and drains to infiltration basins before discharging into San Juan Creek.
Subdrainage Area D	Residential and mixed-use development	This subdrainage area is comprised of approximately 773 acres and is located in the northern portion of Planning Area 3. A flood control basin is provided in the western portion of this subdrainage area. Runoff will connect to a local storm drain in "C" Street prior to entering into Water Quality Basin D. The basin has been sized to accommodate the runoff from the "K" Street Bridge between Planning Areas 2 and 3. Water Quality Basin D2 would provide for biofiltration and as an extended detention basin. Both of these facilities would discharge into Gobernadora Creek, which is not part of the ROMP exemption, and therefore, are sized for hydromodification and Low Impact Development (LID) requirements. BMP implementation and design requirements will be consistent with the ROMP.
Subdrainage Area E	Residential and industrial development	This subdrainage area is comprised of approximately 60 acres and is located in the northern portion of Planning Area 4. Runoff from the Subdrainage Area E is conveyed into an infiltration basin before discharging into San Juan Creek.
Subdrainage Area F	Industrial and office development	This subdrainage area is comprised of approximately 67 acres and is located in the southern portion of Planning Area 4. Runoff from the Subdrainage Area F is conveyed into an infiltration basin before discharging into San Juan Creek. The infiltration basin is located northwest of Subdrainage Area F, adjacent to San Juan Creek.

BMP: Best Management Practices; ROMP: Runoff Management Plan

Source: RBF 2015.

Consistent with the ROMP, discharges directly into the ten-year floodplain for San Juan Creek are exempt from the hydromodification criteria (see the letter from the San Diego RWQCB provided as Attachment 2 of the Conceptual WQMP [Appendix E of this Addendum]). Subdrainage Areas A, B, C, E, and F all discharge directly into San Juan Creek and are therefore, not creating a hydrologic condition of concern.

Subdrainage Area D will discharge into Gobernadora Creek and is subject to the Hydromodification Management Plan (HMP) requirements outlined in the ROMP.[31] Drainage patterns, BMP implementation, and design requirements for Subdrainage Area D will be consistent with the ROMP. BMP improvements to address hydromodification requirements are discussed in detail in Section IX of the Conceptual WQMP, provided in Appendix E.

The interim South Orange County HMP requirements state the following:

> An HCOC is considered to be mitigated when on-site or regional hydromodification controls are provided such that:
>
> - For flow rates from 10 percent of the 2-year storm event to the 5-year storm event, the post-project flows do not exceed pre-development (naturally occurring) peak flows.
> - For flow rates from the 5-year storm event to the 10-year storm event the post-project peak flows may exceed pre-development (naturally occurring) flows by up to 10 percent for a 1-year frequency interval.

As a planning level document, the ROMP utilized the development assumptions in FEIR 589, which have subsequently been refined as part of the Master Plan and Subarea Plan efforts. As it applies to this Project, the ROMP made the following assumptions:

- Planning Area 3 is located within the Cañada Gobernadora and Central San Juan Creek regional watershed sub-basins and consists of 2,171 gross acres.
- Planning Area 4 is located within the Verdugo and Central San Juan Creek watershed sub-basins and consists of 1,531 gross acres.[32]

As shown in the Statistical Table (Table 2) the total gross development acres for Planning Areas 3 and 4 would be 2,686 acres. This is less than what was assumed as part of the ROMP; however, the densities of the land uses have increased. The ROMP made basic land use assumptions in the hydrologic models to assess potential runoff and acknowledged that if changes to the land use occurs additional analysis may be required using the more detailed land planning data. Though both the ROMP and the Master Area Plan depict Planning Area 3 as being containing 2,171 acres, for future conditions the ROMP assumed 1,760.5 acres of urban land uses for Planning Area 3, with the remainder in open space or natural uses. The Master Area Plan assumes the entire 2,171 acres would be urban development. For Planning Area 4, the net

[31] The MS4s permit issued by the San Diego Regional Water Quality Control Board (SDRWQCB) to the County of Orange, the incorporated cities of Orange County, and the Orange County Flood Control District (Order No. R9-2009-0002, NPDES No. CAS0108740) establish hydromodification criteria. The South Orange County HMP was prepared to address these requirements. The South Orange County HMP was submitted to the SDRWQCB on December 16, 2011 and comments were received on April 25, 2012, tentatively approving the sections of the HMP that would likely be included in the Final HMP. The HMP was resubmitted on October 25, 2012 with specific exemptions included. Comments were received from the SDRWQCB via a letter to the County of Orange on July 31, 2013, which directed the County to remove the exemptions that were not specifically identified in the MS4 Permit. Subsequently, the County of Orange reached agreement with the SDRWQCB staff with regards to the exemptions issue. The agreement, which is contained in Tentative Order R9-2015-0001 and includes interim exemptions in the San Diego Regional Permit, is scheduled to be adopted in early 2015. (RBF 2014)

[32] The ROMP identifies 1,531 gross acres in Planning Area 4. The planning area boundary encompasses a larger area than what was initially approved for development. In the ROMP the hydrologic modeling for Planning Area 4 assumed 775.4 acres (not all of these acres were assumed to be urban land uses). As discussed in Section 2.3, the Settlement Agreement further reduced the amount of developable acres in Planning Area 4 to 550 acres. Further limitations have been placed on Planning Area 4 by USFWS as a result of a minor amendment to the SSHCP for "F" Street.

development acres is slightly less than the development assumptions in the ROMP. The ROMP assumed 521.5 acres of urban uses compared to the 515 acres reflected in the Master Area Plan. This deviation in net development acres would not result in a new significant impact because as part of the future ROMP studies, which will be prepared at the level of Tentative Map approvals and prior to rough grade plan approvals, all County design standards are being met. As stated above, a condition being placed on the Master Area Plans is that more site specific ROMP studies would be developed at the level of Tentative Map approvals and prior to rough grade plan approvals. The studies will address refinements based on specific land use, grading, phasing and demonstrate that all County requirements will be met. As stated in the ROMP, "The ROMP is intended to be a "living document," one capable of being modified as new information becomes available and issues/opportunities addressed since regulatory requirements are constantly changing and development plans are evolving." Though the gross development acres for Planning Areas 3 and 4 are less than what was assumed in the ROMP, and there are minor modifications to the location of the facilities, from a CEQA perspective, the Project can be found in substantial compliance with the ROMP. Consistent with the ROMP and County of Orange requirements, the Planning Areas 3 and 4 water quality facilities have been sized to retain runoff volume from the 85th percentile, 24-hour design storm for the developed area tributary to each proposed outfall.

The ROMP acknowledges that the preliminary footprint sizes of the flood control and water quality/hydromodification mitigation basins are conservative and that It is anticipated that as the planning area concepts and improvement designs are refined and supplemental reports are prepared, the basin designs will evolve and be "optimized." Outfalls that do not discharge to the San Juan Creek floodplain are also designed to achieve the flow duration control standard for hydromodification control.

Subsequent and more detailed ROMP studies are required in conjunction with the master tentative map ('A" Map) and rough grading plans, when more refinements have been presented for land use, grading, and phasing. For example, at the Master Plan level the major storm drain lines are identified as being in the road right-of-way of arterial highways. At the tentative tract level when local roadways are known, additional detail on the sizing of facilities and the connections with outfalls will be provided. Providing more detailed information at each subsequent phase of approval is consistent with entitlement process that have been established for the Rancho Mission Viejo Planned Community and complies with guidance language contained in the Regulation Compliance Matrix for implementation of conditions and mitigations. The Master Plan and Subarea Plans are conceptual level planning documents.

With implementation of these design features, the post-project flow peaks will be consistent with the pre-project levels. The existing flow regime will be maintained. A Master Homeowners Association (HOA) will be formed or another designated entity will be responsible for the inspection and maintenance of most of the structural BMPs. The County will be responsible for those BMPs that only serve the public roadway areas. The County is anticipated to inspect and maintain all public roads, regional trails, and storm drain infrastructure throughout the Planning Areas. With the implementation of the FEIR 589 mitigation program—which includes SC 4.5-1 through SC 4.5-11 and MM 4.4-1 through MM 4.5-8—drainage impacts would be mitigated to a less than significant level. The implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Water Quality

Since the certification of FEIR 589, the listing of impaired water bodies pursuant to Section 303(d) of the Clean Water Act has been updated. The 2010 303(d) listing for the San Juan Creek Watershed includes the same two locations as were listed on the 2002 list included in FEIR 589; however, the following additional pollutants have been added for the stretch one mile from the outlet at the Pacific Ocean:[33]

- Dichlorodiphenyldichloroethylene (DDE)
- Phosphorus
- Selenium
- Total Nitrogen
- Toxicity

A Total Maximum Daily Load (TMDL) must be developed for each water quality constituent that compromises a beneficial use. A TMDL is an estimate of the total load of pollutants (from point, non-point, and natural sources) that a water body may receive without exceeding applicable water quality standards (with a "factor of safety" included). TMDLs have been developed for bacteria indicators at the San Juan Creek mouth. TMDLs are expected for the other pollutants between 2019 and 2021.

The Conceptual WQMP identified the pollutants of concern as those pollutants that are anticipated or potentially could be generated based on past and proposed land uses that may potentially impair beneficial uses in the receiving water by adversely affecting receiving water quality or endangered species. Potential pollutants of concern for Planning Areas 3 and 4 include:

- Pathogens (bacteria and viruses)
- Toxic organic compounds
- Sediment (total suspended solids)
- Nutrients
- Heavy metals (aluminum, cadmium, copper, lead, and zinc)
- Hydrocarbons (oil and grease, polycyclic aromatic hydrocarbons [PAHs])
- Pesticides
- Trash and debris
- Chlorine

Consistent with FEIR 589, development in Planning Areas 3 and 4 will be required to implement various BMPs to reduce potential impacts. Exhibit 24 depicts the locations of the various conceptual water quality basins. The Conceptual WQMP for Planning Areas 3 and 4 (see Appendix E) identifies the BMPs to address potential pollutants of concern; The Conceptual WQMP also identifies other measures that would control post-development peak storm water runoff discharge rates and velocities to maintain or reduce pre-development downstream erosion rates and to protect stream habitat. The source-control BMPs include routine non-structural BMPs, routine structural BMPs, and BMPs for individual categories/project features. Site-design BMPs that help reduce the predicted increase in runoff volume include the clustering of development into planning areas, leaving large amounts of undeveloped open space within the

[33] The 2002 303(d) listing identified bacteria indicators for the Pacific Ocean Shoreline at San Juan Creek with an extent of 1.2 miles, at the San Juan Creek mouth for 1 mile, and at the mouth (6.3 acres). These stretches are not located within the Rancho Mission Viejo Planned Community, which is located approximately 5.5 miles from the shoreline.

Rancho Mission Viejo Planned Community. The use of native and drought-tolerant plants in landscaped areas and the use of efficient irrigation systems in common landscaped areas will help reduce or eliminate dry weather flows.

The BMPs are consistent with those identified in FEIR 589. With implementation of the FEIR 589 mitigation program—which includes SC 4.5-1 through SC 4.5-11 and MM 4.4-1 through MM 4.5-8—FEIR 589 determined that water quality impacts for the Rancho Mission Viejo Planned Community would be mitigated to a less than significant level except for the contribution of pathogen indicators in storm water runoff. Implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Groundwater

According to Plate 1.2 of the United States Geological Survey's (USGS') Cañada Gobernadora quadrangle, historical high groundwater reaches the surface in Cañada Chiquita and Cañada Gobernadora. Groundwater also rises up to within ten feet of the ground surface in many of the small tributaries to both Cañada Chiquita and Cañada Gobernadora (RBF 2015).

The approach taken by the Conceptual WQMP for Planning Areas 3 and 4 to protect groundwater quality is multi-tiered: (1) site-design and source-control BMPs will be implemented to prevent the discharge of pollutants to the maximum extent practicable; (2) the proposed treatment-control BMPs will incorporate infiltration only where there is at least a ten-foot separation to groundwater; and (3) where infiltration is proposed, the water will be pretreated in a water quality treatment facility sized to meet the Municipal Separate Storm Sewer System Program (MS4) Permit requirements. Some incidental infiltration will occur in the water quality basins and vegetated swales; however, in these facilities, vegetation will provide an adsorptive bottom organic layer that will assist in pollutant uptake and will protect groundwater quality.

The Conceptual WQMP for Planning Areas 3 and 4 addresses the concern of decreased infiltration and groundwater recharge. In spite of the increase in imperviousness, the effect of the development is likely to increase infiltration and groundwater recharge due to the proposed bioretention basin in Subdrainage Area D and from landscape irrigation throughout the site. BMPs in the southern Subdrainage Areas B and C will also contribute to incidental infiltration. In addition, much of the additional runoff volume will ultimately infiltrate into the wide San Juan channel and will help to sustain the groundwater aquifer for downstream water supply users. Therefore, it is very unlikely that infiltration and groundwater recharge would be reduced overall.

As discussed in FEIR 589, the distributed "infiltration" facilities are intended to provide both water quality management and flow management during small to medium rainstorms. In addition to water quality management, they are designed to mimic the annual water balance; maintain groundwater infiltration; and reduce artificial dry season stream flow during smaller more frequent rainstorm events (generally less than 2 year frequency). These issues will further addressed during the preparation of the tentative map and rough grading plans when land uses and grading concepts are better defined.

The only pollutant of concern for which there is a groundwater quality objective is nitrate. The water quality objective for nitrate-nitrogen is 10 milligrams per liter (mg/L); however, this level is much higher than observed concentrations of nitrate-nitrogen in urban runoff. As discussed in the Conceptual WQMP for Planning Areas 3 and 4, the range of observed nitrate-nitrogen concentrations from urban land uses in Los Angeles County are about 0.3 to 1.4 mg/L. Projected effluent concentrations from the treatment-control BMPs range from 0.7 to 0.8 mg/L. Therefore, the potential for adversely affecting groundwater quality for this pollutant of concern is not significant.

With the implementation of the FEIR 589 mitigation program, which includes SC 4.5-1 through SC 4.5-11 and MM 4.4-1 through MM 4.5-8, these impacts would be mitigated to a less than significant level. The implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Flood Hazards/Seiche/Tsunami

The Conceptual WQMP for Planning Areas 3 and 4, which was prepared to satisfy the requirements of FEIR 589's MM 4.5-1, identifies specific measures that address flood protection, surface hydrology, water quality, and stream stability for a broad range of storm events. This includes a number of basins that will provide water quality treatment as well as flood-control volume and flow attenuation.

The ultimate condition hydrology for Planning Areas 3 and 4 will meet the existing condition flow rates at each of the outfall locations. This is consistent with the mitigation requirements of FEIR 589 and the Final ROMP. This will be achieved through detention, retention, and infiltration or a combination of each. Hydrologic analysis for the flood control facilities will be prepared in accordance with the 1986 Orange County Hydrology Manual and 1995 Orange County Hydrology Manual Addendum No. 1. Runoff hydrographs for the 100-year high confidence and 100-, 50-, 25-, 10-, 5-, and 2-year expected values were prepared at each discharge location. The analysis demonstrates that increases in peak discharges, increases in runoff volume, channel aggradation/degradation, erosion, and channel stability do not produce adverse impacts during any of the analysis storm events. This analysis is consistent with the applicable County of Orange standards pertaining to flood-control volume and flow attenuation and meets the conditions applied to the Rancho Mission Viejo Planned Community.

The Project does not involve the construction or modification of a levee or dam. The area is not prone to seiches or tsunami because it is not in close proximity to a major water body or ocean. Though basins are proposed in conjunction with the construction of Planning Areas 3 and 4, the storage capacity of individual combination basins will designed to be less than 15 acre-feet in order to not fall under the jurisdiction of the California Division of Safety of Dams.

Improvements within Caltrans Right-of-Way

No substantial impacts to water quality or potential flooding would be associated with the improvements within Caltrans right-of-way. The overall design for the drainage and water quality provides for a number of basins that will provide water quality treatment and flood-control volume and flow attenuation. None of these basins would be located within Caltrans right-of-way. Facilities within Caltrans right-of-way would meet mandatory design standards.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any new hydrology or water quality impacts, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. In recognition of the magnitude of the Project area, phasing of development ROMP and drainage for Planning Areas 3 and 4 is proposed until more detailed land use plans are available. Therefore, the timing for MM 4.5-1 of FEIR 589 (Items 14 through 30 and 247 in the RCM) has been modified to reflect that the ROMP evaluation for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals. Please refer to Items 14 through 97, 247 through 250 and 527

through 542 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

Because there is no feasible method for infiltrating storm water flows from large storms due to saturated soil conditions and the impracticality of providing sufficiently large storage facilities, FEIR 589 identified potential pathogen impacts as a potentially significant adverse impact even after applying all feasible mitigation measures. Through the use of source and treatment controls, the Rancho Mission Viejo Planned Community, which includes Planning Areas 3 and 4 and their associated improvements, does employ BMPs meeting the "Maximum Extent Practicable" (MEP) standard established by the State Water Resources Control Board and accordingly reduces impacts to the maximum extent feasible pursuant to current water quality regulations. A Findings of Fact and a Statement of Overriding Considerations were adopted by the County Board of Supervisors in conjunction with the certification of FEIR 589. This Statement of Overriding Considerations would continue to apply to this Addendum for the Planning Areas 3 and 4 Master Area Plan, Subarea Plans, and associated approvals.

Finding of Consistency With Final EIR 589

As discussed above, with the construction of development in Planning Areas 3 and 4 there would be potential impacts associated with modification to drainage systems and water quality. These issues were addressed in FEIR 589 and a mitigation program was developed to reduce the impacts. The potential impacts on drainage systems were reduced to a level of less than significant. However, FEIR 589 identified water quality impacts associated with pathogens as a potentially significant adverse impact even after applying all feasible mitigation measures. This impact has been identified as unavoidable significant impacts for the Planning Areas 3 and 4. However, this finding is consistent with the conclusions of FEIR 589. When certifying FEIR 589, the County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations addressing this impact. This Statement of Overriding Considerations would continue to apply to this Addendum for Planning Areas 3 and 4.

Pursuant to Section 15162 of the State CEQA Guidelines, the County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.10 LAND USE AND PLANNING

Summary of Previous Findings

The Rancho Mission Viejo Planned Community is generally at the edge of urban development. Existing uses within the Rancho Mission Viejo Planned Community include various agricultural uses, industrial leases, and rural residential uses. The Rancho Mission Viejo Planned Community allows the continuation of these uses until they are replaced with urban uses. As set forth in FEIR 589, the Rancho Mission Viejo Planned Community would not disrupt or divide the physical arrangement of an established community. The closest established communities are Ladera Ranch to the north, Wagon Wheel and Coto de Caza to the east, and the cities of San Juan

Capistrano and San Clemente to the west. The Rancho Mission Viejo Planned Community would not have any physical impact on these communities. At the time FEIR 589 was prepared, the Rancho Mission Viejo Planned Community was found to be inconsistent with the regional planning programs, which identified a greater level of development on the site. This was identified as a significant unavoidable impact.

Project Impact Analysis

a) Would the project physically divide an established community?

b) Would the project conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

c) Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

The Project would not physically divide or impact any established community. FEIR 589 did identify that the Rancho Mission Planned Community would result in the displacement of a number of uses currently utilizing the Project site. Specific to Planning Areas 3 and 4, FEIR 589 identified commercial, industrial, and agricultural businesses, as well as residences for agricultural workers being located within these planning areas. No significant impact was identified for the displacement of the industrial and agricultural businesses because there is no commitment to continue these uses beyond the termination dates of the leases with or without the development of the Rancho Mission Viejo Planned Community. The displacement of the RMV agricultural uses and residences would be the choice of the landowner and would not be considered a significant impact. The ROSA does provide RMV with the right to replace employee housing. Up to 15 acres has been allocated for potential replacement employee housing. Planning Areas 3 and 4, in conjunction with the rest of the Rancho Mission Viejo Planned Community would become a new community, which would be compatible with the surrounding developments.

The proposed gross development acreage for Planning Areas 3 and 4 would be 2,686 acres. The distribution of residential units and the UAC use are reflected in the Planned Community Statistical Table (Table 2) and Master Area Plans, which is subject to approval by the Orange County Planning Commission consistent with the provisions of the *Ranch Plan Planned Community Program Text*.

From a land use and planning perspective, the proposed modifications to the Statistical Table would not result in any conflicts with land use or planning programs. The ROSA provided for an allocation of units throughout the Rancho Mission Viejo Planned Community provided the total development level was not exceeded. The development footprint for Planning Area 3 has not changed and there is only a minor reduction in size of the development footprint for Planning Area 4 (reduced by 35 acres) from what was allocated in the ROSA. Development density is consistent with the General Plan designations and zoning. The development setbacks from San Juan Creek required by the ROSA have been provided for and are reflected on the Land Use Plan (Exhibit 3).

As discussed in the Summary of Previous Findings, at the time FEIR 589 was prepared, the Rancho Mission Viejo Planned Community was found to be inconsistent with the regional planning programs, which identified a greater level of development on the site. This was identified as a significant unavoidable impact. Subsequent to the approval of the Rancho Mission Viejo Planned Community and certification of FEIR 589, the Orange County Preferred (OCP) socioeconomic

projections were modified and the regional planning documents were updated to reflect the 2004 approvals.[34] As such, this is no longer an impact.

The Project site is within the SSHCP. Consistency with the plan was discussed in Section 4.4, Biological Resources.

Based on the analysis, implementation of Planning Areas 3 and 4 would not result in any new impacts beyond those analyzed in FEIR 589.

Improvements within Caltrans Right-of-Way

The proposed improvements to SR-74 would not result in land use impacts such as physical impacts to established communities or inconsistency with regional planning documents. The improvements to connect Cow Camp Road to SR-74 would require modification to the existing roadway. During the design process, the need for additional right-of-way would be determined. Should additional right-of-way be required, it would be located on the RMV property and no impacts to land uses would occur. Even if the required right-of-way affects the current Tree of Life Nursery operation, no significant impacts are expected. The development of Planning Area 4 will displace this use. As stated above, this was not considered a significant impact because there is no commitment to continue these uses beyond the termination dates of the leases with or without the development of the Rancho Mission Viejo Planned Community. Since the connection of Cow Camp Road would be designed and constructed in conjunction with the development of Planning Areas 3 and 4, the design would be compatible with the proposed uses. The new intersections would be in close proximity to the entrance of Caspers Regional Park; however, no direct or indirect impacts on the park would occur (this is further discussed in Section 4.15, Recreation). Therefore, no significant land use impacts within Caltrans right-of-way are anticipated.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any new land use and planning impacts, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 243 and 244 and 254 through 259 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

As noted above in the analysis, the significant unavoidable impact identified in FEIR 589 (inconsistency with regional planning documents) was eliminated with the update of the socioeconomic projections for Orange County and the associated regional planning documents that are based on the adopted projections. FEIR 589 did not identify any other significant, unavoidable land use impacts associated with the Rancho Mission Viejo Planned Community,

[34] Population, housing, and employment data is developed on a County-wide basis for use in planning programs by the Center for Demographic Research based at the California State University at Fullerton. This data estimates and projections for housing, population, and employment in Orange County. These efforts support both operational and long-range planning activities of various government agencies and are used in the regional planning documents. These socioeconomic projections are called the Orange County Projections or OCP. A number follows the OCP designation to indicate the year the data set was adopted. The OCP numbers are updated approximately every four years.

which includes Planning Areas 3 and 4. Therefore, no significant land use and planning impacts are anticipated with the implementation of Planning Areas 3 and 4.

Finding of Consistency With Final EIR 589

As discussed above, no significant land use and planning impacts have been identified for Planning Areas 3 and 4. Though the County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations pertaining to unavoidable significant impacts due to inconsistency with the socioeconomic projections for Orange County and the associated regional planning documents, this impact has been eliminated due to an update of the regional planning documents. Therefore, the Planning Areas 3 and 4 Project does not contribute to this impact.

Pursuant to Section 15162 of the State CEQA Guidelines, the County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.11 MINERAL RESOURCES

Summary of Previous Findings

FEIR 589 identified two areas of significant mineral resources within the Rancho Mission Viejo Planned Community limits. The first is the Oglebay-Norton Industrial Sands (ONIS)[35] operation in Trampas Canyon, which would be displaced by development in Planning Area 5. The second is sand and gravel resources within San Juan Creek. FEIR 589 assessed that the ability to extract these resources would be lost with the Rancho Mission Viejo Planned Community. These impacts remained significant and unavoidable and Findings of Fact and a Statement of Overriding Considerations were adopted for impacts to mineral resources.

Project Impact Analysis

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Would the project result in the loss of availability of a locally important mineral resources recovery site delineated on a local general plan, specific plan, or other land use plan.

The mineral resources impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines.

As indicated above, FEIR 589 identified two areas of significant mineral resources within the Rancho Mission Viejo Planned Community limits: the sand and gravel operation in Planning Area 5 and sand and gravel resources in San Juan Creek. Planning Areas 3 and 4 would not impact either of these mineral resources. FEIR 589 did make Findings of Fact and adopted a

[35] FEIR 589 identified the site as the ONIS. Though the operator of the quarry has changed, the nature of the operations is not substantially different from what was evaluated in FEIR 589.

Statement of Overriding Considerations because, with the implementation of the Rancho Mission Viejo Planned Community, recovery of the mineral resources in these locations would be precluded.[36] The approval of the Planning Areas 3 and 4 Project would not result in any new impacts or increase the severity of a previously identified significant impact, as previously analyzed in FEIR 589.

Improvements within Caltrans Right-of-Way

The improvements at SR-74 would not be located near the sand and gravel operation in Trampas Canyon. Neither the proposed signal nor the two new connections at SR-74 would affect the sand and gravel resources in San Juan Creek; therefore, improvements under Caltrans jurisdiction would not impact these mineral resources.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts on mineral resources associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any impacts on mineral resources, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No mitigation is required.

Level of Significance After Mitigation

FEIR 589 concluded that the Rancho Mission Viejo Planned Community had significant unavoidable impacts by precluding the extraction of mineral resources in San Juan Creek, a State-designated Mineral Resource Zone. Findings of Fact and a Statement of Overriding Considerations were adopted by the County Board of Supervisors in conjunction with the certification of FEIR 589. However, the Planning Areas 3 and 4 Project does not contribute to these significant, unavoidable impacts.

Finding of Consistency With Final EIR 589

As discussed above, Planning Areas 3 and 4 would have no impacts to mineral resources. Though the County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding Considerations pertaining to unavoidable significant impacts to mineral resources, the Planning Areas 3 and 4 Project does not contribute to this impact.

The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

[36] The sand and gravel operations in Trampas Canyon are allowed to continue as an existing use until such time as Planning Area 5 is developed. Recovery of the resources in San Juan Creek will not be permitted because San Juan Creek has been designated as part of the SSHCP Habitat Reserve.

4.12 NOISE

Summary of Previous Findings

FEIR 589 addressed both short-term construction and long-term operational noise impacts. FEIR 589 concluded that impacts would be less than significant if construction was limited to the hours prescribed in the County of Orange Noise Ordinance, if equipment was equipped with mufflers, and if stockpiles were located away from residential areas.

Impacts from noise from the Rancho Mission Viejo Planned Community project-generated traffic were estimated in FEIR 589 by comparing the with and without the Rancho Mission Viejo Planned Community traffic volumes and evaluating the projected changes in noise levels along roadways in the vicinity of the RMV Planning Area. The analysis evaluated potential impacts on the adjacent arterial highways, extending west to I-5. Cumulative noise impacts were estimated by comparing the future noise levels to existing noise levels. FEIR 589 noted that, based on the thresholds of significance, the Rancho Mission Viejo Planned Community would not have any significant project-specific noise impacts.

Aircraft noise was determined not to be a significant impact.

Project Impact Analysis

a) Would the project expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?

b) Would the project expose persons to or generate excessive ground borne vibration or ground borne noise levels?

c) Would the project cause substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d) Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

e) For a project located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport would the project expose people residing or working in the project area to excessive noise levels?

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

The noise impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines.

Though residences in Planning Area 1 are occupied and the future residences in Planning Area 2 will be occupied by the time the development of Planning Areas 3 and 4 are developed, the distance of these residences from the Project site would be sufficient to minimize construction related noise. The closest residences in Planning Area 1 (those located east of Antonio Parkway) are located approximately 1.5 miles from the most westerly edge of Planning Area 3. The closest development in Planning Area 2 is approximately 2,000 feet from the western edge of Planning Area 3. The only existing noise-sensitive uses within Planning Areas 3 and 4 are several residences used by the RMV agricultural workers. With the development of Planning Area 3, these

residences will be displaced. Any existing residences that would be retained and the early residents of Planning Areas 3 and 4 would be exposed to construction-related noise. As discussed in FEIR 589, construction noise represents a short-term impact on ambient noise levels (see pages 4.8-12 and 4.8-13 of FEIR 589). The equipment used for site grading would generate the highest construction noise levels. Peak noise levels generated by the equipment that would be used during grading would be between 70 and 95 A-weighted decibels (dBA) at a distance of 50 feet. At 150 feet, the peak construction noise levels range from 61 to 86 dBA and would reduce to 44 to 69 dBA at 1,000 feet. It should be noted that these noise levels are based upon worst-case conditions and, typically, noise levels from the site would be less. The remaining existing residences would have the highest likelihood of exposure to these peak levels. For the new homes, the grading is generally done in the subarea prior to the occupancy of new homes. Therefore, there would be a greater separation between grading activities and occupied residences. The FEIR found that the limits on the hours of construction activities, as well as other provisions in the Orange County Noise Ordinance, would reduce the short-term construction noise impacts to less than significant. This finding would be applicable to development of Planning Areas 3 and 4 and their associated improvements.

FEIR 589 also evaluated the long-term operational impacts (see pages 4.8-13 through 4.8-27) associated with the Rancho Mission Viejo Planned Community. The analysis evaluated potential impacts on the adjacent arterial highways, extending west to I-5. The noise conditions would not change substantially from what was addressed in FEIR 589 because the overall level of development allowed for the Rancho Mission Viejo Planned Community has not changed. Due to the limited number of access points to the Rancho Mission Viejo Planned Community, the development would be distributed to the same arterial highway network that was evaluated in the previous noise studies. This includes the circulation network proposed as part of the Rancho Mission Viejo Planned Community (i.e., Cow Camp Road, “F” Street, and “K” Street). FEIR 589 did not identify noise impacts from these facilities even assuming full build-out of the Rancho Mission Viejo Planned Community. The need for sound attenuation for development adjacent to roadway within Planning Areas 3 and 4 would be evaluated prior to issuance of building permits. Evaluation of future noise impacts on the development internal to Planning Areas 3 and 4 cannot be assessed at this time because building locations of sensitive uses are not known. This analysis is generally required as part of the tentative tract map process. The County Standard Condition of Approval requiring this analysis has been applied to the Rancho Mission Viejo Planned Community as a whole, including Planning Areas 3 and 4. This was identified as SC 4.8-3 in FEIR 589. Therefore, the magnitude of construction and operational noise on surrounding land uses would be consistent with the findings in FEIR 589.

Improvements within Caltrans Right-of-Way

There are no noise-sensitive receptors in or immediately adjacent to the Caltrans right-of-way. Therefore, no noise impacts within Caltrans right-of-way would occur.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community, including the construction of Planning Areas 3 and 4. Implementation of Planning Areas 3 and 4 would not result in any new noise impacts, nor would it substantially increase the projected noise levels as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 557 through 563 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, with implementation of the mitigation program provided in Appendix A, the Rancho Mission Viejo Planned Community, which includes Planning Areas 3 and 4, would not result in any significant unavoidable noise impacts.

Finding of Consistency With Final EIR 589

As discussed above, Planning Areas 3 and 4 would not result in noise impacts to any existing sensitive receptors. The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.13 POPULATION AND HOUSING

Summary of Previous Findings

At the time the Rancho Mission Viejo Planned Community was approved, the OCP-2000M[37] socioeconomic projections assumed 20,468 units in the RMV Planning Area. The OCP-2004 projections had not been adopted but also reflected the higher unit count. The finding of a significant unavoidable impact was identified because the Rancho Mission Viejo Planned Community would not fully meet the housing goal and would result in an inconsistency with the adopted regional growth projections. The FEIR states that the inconsistency could be eliminated through updating the socioeconomic projections for Orange County and the associated plans that are based on the adopted projections; however, since the County of Orange is not the agency with jurisdiction over the regional planning programs, this impact was identified as a significant, unavoidable impact.

FEIR 589 determined that the Rancho Mission Viejo Planned Community would not (1) remove obstacles to growth in the surrounding counties or areas within Orange County; (2) induce unplanned growth; (3) encourage economic activities that would result in adverse impacts to the environment; or (4) require the expansion of one or more public services to areas that were not already planned to receive such services. Growth resulting from the Rancho Mission Viejo Planned Community would be limited to the growth planned as part of the Planned Community project and would not substantially influence growth outside the project limits. This is primarily due to the fact that much of the surrounding area is currently developed or in public ownership.

[37] OCP-2000M are the Orange County Projections in affect at the time FEIR 589 was prepared. This data set was developed with a base year of 2000 but were modified (hence the notation of M after the number) by the Center for Demographic Research for consistency for incorporation into the SCAG'S growth forecast for the 2001 Regional Transportation Plan (RTP) and the South Coast Air Quality Management District's (SCAQMD) Air Quality Management Plan (AQMP).

Project Impact Analysis

a) Would the project induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

b) Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

c) Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

The population and housing impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. As previously indicated, subsequent to FEIR 589 the OCP numbers were updated to reflect the housing and population projects associated with the Rancho Mission Viejo Planned Community, as approved. The updated OCP numbers have been incorporated into the regional growth forecasts and planning documents (such as the Regional Transportation Plan/Sustainable Communities Strategy). Therefore, the significant unavoidable impact identified in FEIR 589 associated with inconsistency with regional planning documents and not providing sufficient housing to fully meet the housing goal, is no longer applicable. A discussion about the revision to the OCP numbers and regional planning documents was also included in the Addendum for Planning Area 1.

FEIR 589 evaluated the historic and projected growth patterns of Orange, San Diego, and Riverside counties. The analysis considered (1) existing land uses; (2) planned land uses; and (3) unplanned lands. Based on regional planning, available infrastructure and infrastructure that would be provided by the Rancho Mission Viejo Planned Community, and landownership of surrounding lands, FEIR 589 determined that the Rancho Mission Viejo Planned Community would not be growth inducing. The Planning Areas 3 and 4 Project would not alter the land use types or increase the overall number of units assumed for the Rancho Mission Viejo Planned Community. The *Ranch Plan Planned Community Tex*t provides for the reallocation of units between planning areas provided the total is not exceeded. Therefore, the determinations made in FEIR 589 are still valid.

The Planning Areas 3 and 4 Project would result in the displacement of employment uses (agricultural and industrial uses) and a limited amount of residences for the agricultural workers. As discussed in Section 4.10, Land Use and Planning, the displacement of these land uses was addressed in FEIR 589. The number of residences being displaced are not of sufficient magnitude (approximately 6 to 10) to affect the regional population and housing projections for the area. The Project provides for replacement housing. Therefore, implementation of Planning Areas 3 and 4 would not result in any new population and housing impacts beyond those analyzed in FEIR 589.

Improvements within Caltrans Right-of-Way

The improvements at SR-74 would not induce substantial population growth. These improvements are designed to either to serve the local land uses within the Rancho Mission Viejo Planned Community or, in the case of the Cow Camp Road connection, will also serve to alleviate traffic on the parallel segment of SR-74. As part of FEIR 589, the potential growth-inducing impacts were evaluated within the larger regional context and no significant impacts were identified. None of the improvements within Caltrans jurisdiction would displace any existing housing. Therefore, implementation of the improvements under Caltrans jurisdiction would not result in any new impacts beyond those analyzed in FEIR 589.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The proposed development of Planning Areas 3 and 4 would not result in any new population and housing impacts, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 5, 389, and 463 in the RCM in Appendix A to this Addendum for measures applicable to the Planning Areas 3 and 4 Master Area Plans and Subarea Plans and associated improvements.

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, with implementation of the mitigation program provided in Appendix A, the Rancho Mission Viejo Planned Community, which includes Planning Areas 3 and 4, would not result in any significant unavoidable impacts associated with population and housing.

Finding of Consistency With Final EIR 589

As discussed above, the Planning Area 3 and 4 Project would have no significant impacts associated with population and housing. The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.14 PUBLIC SERVICES

Summary of Previous Findings

FEIR 589 evaluated potential impacts associated with the provision of public services and identified potentially significant unavoidable impacts for fire protection services; however, these impacts were generally associated with development in Planning Areas 7 and 9 due to their remoteness. As part of the Settlement Agreement (see Section 2.3), development was eliminated in Planning Area 9 and only the RMV headquarters would be allowed in Planning Area 7; therefore, these impacts have been eliminated.

Project Impact Analysis

a) 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 objectives for any of the public services:

Fire protection?

Police protection?

Schools?

Parks?

Other Public Facilities?

The public services impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. This Addendum documents updated information since the certification of FEIR 589 and demonstrates that the Master Area Plans provide for public facilities identified as mitigation measures in FEIR 589.

Fire Protection

Fire protection services are provided by the Orange County Fire Authority (OCFA). The closest existing fire station is located in Ladera Ranch (Crown Valley Parkway near Antonio Parkway). FEIR 589 identified the need for additional fire stations to service the Rancho Mission Viejo Planned Community. A new fire station is currently under construction in Planning Area 1 and is expected to be operational in summer 2015. FEIR 589 identified the potential need for two additional fire stations in Planning 3. The precise location of any new stations would be coordinated with OCFA; the *Secured Fire Protection Agreement*, *The Ranch Plan—Planning Areas 2 through 10* requires the dedication of a permanent fire station site within 180 days of the first builder "B" map recordation or the recordation of the first non-residential map. Three potential locations have been identified as part of the Subarea Plans. The Subarea Plans for Subareas 3.3, 3.5, and 3.6 identify parcels for community facilities, which can include a fire station. Therefore, sufficient provisions have been made to accommodate future fire facilities. The construction of the fire stations would not result in any significant environmental impacts beyond those addressed as part of the Rancho Mission Viejo Planned Community because the facilities would be constructed within the development areas.

Subsequent to the certification of FEIR 589, the *Ranch Plan Planned Community-Wide Fire Protection Program* was prepared in cooperation with OCFA and approved by the Board of Supervisors on July 31, 2007. The design of facilities (including but not limited to streets, hydrant locations, residential development and fuel modification) would be in conformance with adopted programs.

Police Protection

Police protection services would be provided by the Orange County Sheriff's Department (OCSD), South Operations Division and the California Highway Patrol (CHP), Capistrano Area. At the time FEIR 589 was prepared, the OCSD stated that the new residents and business uses brought into the area by virtue of the development of the Rancho Mission Viejo Planned Community would place additional demands on services. The OCSD identified a need for an additional substation facility within the Rancho Mission Viejo Planned Community area. Subarea Plan 3.5 provides an up to 20-acre site for community facilities that would allow the construction of a Sheriff Substation. The substation would be constructed within the development area; therefore, there would be no physical impacts beyond those addressed as part of the development. No significant impacts associated with proposed facilities are anticipated.

Schools

The Project site is within the Capistrano Unified School District (CUSD). Planned communitywide, FEIR 589 identified the anticipated need for five elementary school sites and one middle school site. FEIR 589 indicated that the precise locations of the schools would be identified in conjunction with the CUSD, although it projected that Planning Area 3 would likely require two elementary schools. Additionally, the middle school was identified as likely being located in Planning Area 3.

Two school sites have been identified within Planning Area 3. Within Subarea 3.1, up to 12 acres have been allocated for community facility uses, which may include a K–8 school and, in Subarea 3.6, up to 17 acres of community facility uses have been identified, which can also provide for a potential K–8 school site. At this level of planning, there are no known constraints with regard to noise, air quality, hazardous materials, land use compatibility, or access that limit the viability of the sites. The precise locations and sizes of the facilities would be determined in conjunction with the CUSD. Adequate provisions have been made within Planning Area 3 to accommodate the required school sites.

Funding for schools is provided through property tax revenue. The payment of school fees (as provided in Section 17620 of the *California Education Code* and in Sections 65995 et seq. of the *California Government Code*) is the exclusive method of required mitigation of any adverse effects related to the adequacy of school facilities. However, subsequent to the certification of FEIR 589, RMV and CUSD entered into an agreement regarding school facilities and funding for Planning Areas 1 and 2. A similar agreement will be negotiated with CUSD for Planning Areas 3 and 4.

Parks

As discussed in Section 4.15, implementation of Planning Areas 3 and 4 would provide for up to 100 acres of additional parkland. The parks would be constructed within the development areas; therefore, the environmental impacts associated with the development of the parks has been assumed within the impacts of the Rancho Mission Viejo Planned Community. The amount of proposed parkland is outlined in the *Ranch Plan Planned Community Local Park Implementation Plan*. Parks within the Rancho Mission Viejo Planned Community are currently assumed to be maintained by the master maintenance corporation; therefore, the addition of the new parks would not result in additional public agency maintenance requirements.

Other Public Facilities

Libraries

FEIR 589 determined that there would be an increased demand for library services due to the increased population and related demand for library services. The closest library is located in Ladera Ranch. The need for an additional facility would ultimately depend on utilization rates of existing facilities and projected demanded for library services. The County of Orange has made provisions for library services through developer fees used to provide for future demand. Subarea Plan 3.5 provides up to 20 acres for community facilities, which can include a library facility should the County deem a new facility is required. Such a facility would likely be part of a joint facility with other community uses. Pursuant to the conditions of approval for the Rancho Mission Viejo Planned Community, the County of Orange and RMV are proposing to enter into a Library Fee Payment Agreement, which would facilitate implementation of the future library. No impacts are anticipated.

Drainage Facilities

As discussed in Section 4.9, a Master Homeowners Association will be responsible for the inspection and maintenance of most of the structural BMPs. The County will be responsible for those BMPs that only serve the public roadway areas. The County is anticipated to inspect and maintain all of the public roads and storm drain infrastructure throughout the Planning Areas.

Improvements within Caltrans Right-of-Way

Improvements within the Caltrans right-of-way would not result in any increased demand for other public facilities or governmental services. There would be potential short-term traffic delays during construction; however, SR-74 would remain open during construction. The CHP would continue to provide service to this facility. The connection of Cow Camp Road would provide an alternative route to SR-74 in times of emergency or road closures. No significant impact to emergency response would occur. Therefore, implementation of Planning Areas 3 and 4 would not result in significant public service impacts on Caltrans facilities or any new impacts beyond those analyzed in FEIR 589.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any new impacts on public services, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 201 through 207, 224, 253, and 589.1 through 599 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, with implementation of the mitigation program provided in Appendix A, the Rancho Mission Viejo Planned Community, which includes Planning Areas 3 and 4, would not result in any significant unavoidable impacts associated with potential impacts to public services.

Finding of Consistency With Final EIR 589

As discussed above, Planning Areas 3 and 4 would have no impacts on public services. The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.15 RECREATION

Summary of Previous Findings

The Rancho Mission Viejo Planned Community requires the construction of new parks and recreational facilities, such as trails and bikeways. The *Ranch Plan Planned Community Local Park Implementation Plan (LPIP)* has been prepared to demonstrate how the Rancho Mission Viejo Planned Community will provide a local park program in compliance with the Orange County Local Park Code and the Master Plan of Local Parks Component of the Recreation Element of the General Plan. The parks would be constructed within the approved development areas. Therefore, FEIR 589 addressed the impacts on the environment as part of the development impacts. No significant unavoidable impacts associated with recreation were identified.

Project Impact Analysis

a) **Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

b) **Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?**

The recreation impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. This Addendum documents updated information since the certification of FEIR 589 and demonstrates that the Master Area Plans provide for the implementation of recreational facilities.

Though not specifically addressed in the CEQA Checklist questions, FEIR 589 evaluated the potential impact of the Rancho Mission Viejo Planned Community on the adjacent regional parks. The Ronald W. Caspers Wilderness Park is immediately adjacent to Planning Area 3. Existing facilities at the park include various multiple use, pedestrian, and equestrian trails; an equestrian day use area; Starr Mesa Equestrian Campground; Live Oak Flats Campground; and a Visitor Center. Existing development at the park is primarily west of Ortega Highway, which bisects the park. The topography of the park helps to serve as a buffer between Caspers Wilderness Park and the surrounding area. The ridgeline along the western edge of the park would generally minimize any views of the Rancho Mission Viejo Planned Community from within the park. However, the development would be visible from within Caspers Wilderness Park from various vantage points, such as points along the Eastridge Trail and the parking lot for the observation deck (predominately Planning Area 4). Planning Area 3 would be visible along the Westridge Trail and more distant views would be possible along Oso Trail. FEIR 589 identified the need for a 500-foot setback along the boundary of Planning Area 3 and Caspers Wilderness Park to serve as a buffer. FEIR 589 determined that the Rancho Mission Viejo Planned Community would introduce an urban component into the open space surrounding the park; however, the wilderness character of the park would be preserved. As proposed, Planning Area 3 provides an approximate 2,000-foot buffer between the eastern edge of development and the ridgeline.[38] Even with the increased buffer, views of the development would be visible from the ridgeline trail. Camping activities are in valley areas and no views of urbanization would be visible. Given the limited vantage points within the Park where development would be visible and the protection of the surrounding areas in open space, there would be minimal impacts on the character of the park as a result of development.

FEIR 589 identified that Planning Area 3 would include 20 to 25 acres of regional sports park uses and a series of neighborhood and community parks (the size and location of which would be determined at the Area Plan level of approval). Additionally, there were provisions for a bike and trail program that will serve both local and regional recreational needs. Planned Communitywide, 2.5 acres of parkland would be provided for every 1,000 residents.[39] The individual improvements and programs are embodied within the project design features, standard conditions and individual mitigation measure established for the Rancho Mission Viejo Planned Community. With the implementation of these comprehensive measures, any potential impacts to existing local and

[38] The SMWD water reservoir would be located within the 2,000-foot open space buffer; however, this would not result in any unforeseen impacts on recreational values.

[39] It should be noted that FEIR 589 identified 82 acres of local parkland. Subsequent to the certification of the FEIR, the *Ranch Plan Planned Community Local Park Implementation Plan* (LPIP) was approved, which identified a total of 96 acres of parkland as being required with full buildout of all the approved units. The LPIP would prevail, with the 96 acres being comprised of creditable acres of both land and improvements.

regional recreation facilities as a result of increased use by area residents would be less than significant.

The LPIP is a program designed to plan and monitor the provision and development of local parks within the Rancho Mission Viejo Planned Community in accordance with Quimby Act requirements. The LPIP is maintained and updated over time as the Rancho Mission Viejo Planned Community is implemented. The Planning Areas 3 and 4 Master Area Plan Development Table (see Table 3) identifies the Subareas where the proposed park acreage would be located, which will incrementally satisfy the Rancho Mission Viejo Planned Community's General Plan Recreation Element parkland requirements as addressed by the *Ranch Plan Planned Community Program Text* (i.e., General Regulation 18 and Section II.B.3.a.6). A total of 100 acres of parkland are shown in Planning Area 3; specifically, Subareas 3.1, 3.2, 3.3, 3.4, 3.5, and 3.7 each provide for up to 5 acres of public parkland; Subarea 3.6 provides for up to 20 acres of public parkland; and Subarea 3.7 provides up to 50 acres for a sports park.

A segment of the San Juan Creek Class I Bikeway will be constructed per the approved September 2011 *Master Trail and Bikeways Implementation Plan*, which depicts the bikeway along the northern side of San Juan Creek (see Exhibit 10). The San Juan Creek Regional Riding and Hiking Trail will be located on the south side of San Juan Creek.

Each Subarea also includes provisions for private recreational uses including, but not limited to, clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails. These facilities would be built in conjunction with the surrounding development and would be privately maintained.

The impacts associated with the construction of the recreational facilities are addressed as part of the larger Rancho Mission Viejo Planned Community because the parks would be included in the development areas. Additionally, FEIR 589 assumed the San Juan Creek Class I Bikeway and the San Juan Creek Regional Riding and Hiking Trail would be located along the creek and would have components outside the development area. These impacts were incorporated into total impact areas identified for the Rancho Mission Viejo Planned Community.

Improvements within Caltrans Right-of-Way

No new recreational facilities would be constructed within the SR-74 right-of-way. The closest recreational facility is the Caspers Wilderness Park, which is bisected by SR-74. Both Cow Camp Road and the local access street in Planning Area 4 would be at-grade intersections with SR-74; therefore, limited visibility of the intersection from the park is expected because of intervening vegetation and proposed development. Additionally, as discussed above, camping activities are in valley areas and no views of the new intersections or the signal on SR-74 would be visible from the majority of the park. The topography of the park helps to serve as a buffer between Caspers Wilderness Park and the surrounding area. FEIR 589 concluded that the wilderness character of the park would be preserved. No significant direct or indirect impact on park or recreational facilities would result from the improvements within Caltrans right-of-way.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any new impacts on recreational facilities, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer

to Items 177, 363, 418, and 577 through 587 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, with implementation of the mitigation program provided in Appendix A, the Rancho Mission Viejo Planned Community, which includes Planning Areas 3 and 4, would not result in any significant unavoidable impacts on recreational resources.

Finding of Consistency With Final EIR 589

As discussed above, Planning Areas 3 and 4 would have no significant impacts to recreational facilities. The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.16 TRANSPORTATION AND TRAFFIC

Summary of Previous Findings

The total trip generation associated with the Rancho Mission Viejo Planned Community would be up to 183,338 trips per day, of which 14,289 average daily trips (ADT) are anticipated to be in the AM peak hour and 18,033 trips in the PM peak hour. The traffic analysis was conducted with a 2025 horizon year both with and without the SR-241 extension. For the scenario without the SR-241 extension, an arterial highway between Oso Parkway and Cow Camp Road is assumed (i.e., "F" Street). Significant unavoidable project and cumulative impacts were identified on arterial highway intersections and the freeway network (both ramps and mainline facilities) with buildout of the Rancho Mission Viejo Planned Community. The number of arterial highway intersections impacted would vary based on the circulation network assumed. As part of FEIR 589, a mitigation program was formulated to address the significant circulation impacts associated with development of the Rancho Mission Viejo Planned Community. However, a number of the proposed improvements are located outside the County's jurisdiction. Because the County is unable to ensure that mitigation outside their jurisdictional boundaries will be implemented, the impacts to be mitigated by those improvements were identified as significant and unavoidable. It should be noted, however, that a number of the required roadway improvements (e.g., the widening of Antonio Parkway and Ortega Highway, the construction of the La Pata Avenue Gap Closure and Cow Camp Road) have been constructed or are under construction.

Project Impact Analysis

a) Would the project conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

b) Would the project conflict with an applicable congestion management program, including, but not limited to level of service standard and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

c) Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

d) Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

e) Would the project result in inadequate emergency access?

f) Would the project conflict with adopted policies, plan or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

The Master Area Plan and Subarea Plan requirements state that the traffic study must prove that the trip generation numbers are consistent with those assumed in the original traffic study prepared for FEIR 589 and must evaluate the timing of the traffic improvements outlined in the South County Roadway Improvement Program (SCRIP) in relation to the submitted plans. This analysis is provided in the *Planning Area 3 and 4 Area Plan Traffic Study* prepared by Stantec (2015), which is summarized below and provided in Appendix F of this Addendum.

Trip Generation Analysis

Table 11 provides a comparison of the trip generation, using assumptions in FEIR 589 as a benchmark against which previous and current Master Area Plans are measured cumulatively. The Planning Areas 3 and 4 land use assumptions include a total of 7,500 dwelling units, separated into "market rate" and "age qualified" categories. The non-residential uses include 305,000 square feet of business park, 145,000 square feet of neighborhood center (commercial uses), and 2,950,000 square feet of "urban activity center" (UAC) uses. Land uses in the UAC areas range from office and business park uses to light industrial and warehousing uses. The primary metric as far as traffic is concerned is external peak hour trips by direction. Total trip generation for Planning Areas 3 and 4 is estimated at 93,735 daily trip-ends.[40] The peak hour trips by direction are also shown in Table 11, these are the key measure for traffic analysis purposes, since traffic impacts are identified using peak hour intersection performance.

South County Roadway Improvement Program

As mitigation in FEIR 589, those locations not meeting the performance standard of level of service (LOS) D were addressed in the SCRIP. That program defined the improvements to be implemented in the study area and the Rancho Mission Viejo Planned Community's responsibilities for contributing to the improvements on a fair share basis. A summary of the improvements in SCRIP and the implementation status is provided in Table 12. This program addresses traffic impacts for the approved development in the Rancho Mission Viejo Planned Community and also for the associated roadway system.

The second part of the required analysis for Master Area Plans focuses on the timing of SCRIP improvements. As shown in Table 12, a number of the required improvements have already been

[40] The term "trip-ends" is typically used to describe trip generation, since the traffic analysis counts separate each end of an actual "trip". A trip-end is essentially a driveway count of all vehicles entering and leaving any land use. A "trip" has two "trip-ends", one at each end of the trip.

implemented. Therefore, the analysis has been focused to address those intersections (identified in FEIR 589) that have not yet been improved in accordance with the SCRIP and for which Rancho Mission Viejo Planned Community has some level of participation. Traffic forecasts have been made for these selected locations and an analysis has been made of their traffic performance in relation to those forecasts.

The 2035 forecasts are derived from the South County SubArea Model (SCSAM). This is a subarea derivative of the Orange County Transportation Analysis Model (OCTAM), which provides the regional consistency context for the subarea model. Key relationships such as County-wide demographic data projections and the geographic trip distribution for the study area and surrounding County area are imported into the SCSAM from the OCTAM parent model. The land use data in the SCSAM is consistent with the original Ranch Plan approvals, and was updated recently using data from the Planning Areas 1 and 2 Area Plans.

The traffic forecasts used in this analysis are for 2035 and represent a long range cumulative scenario in which Planning Areas 1 through 5 are fully built out along with the associated regional roadway additions (i.e., La Pata Avenue gap closure, “F” Street, and Cow Camp Road to Ortega Highway). Although Planning Area 5 does not need to be represented in this analysis, using the full cumulative buildout setting enables the intersection performance to be analyzed in a long range context and enables the implementation timelines to be evaluated accordingly.

As in the original traffic study, intersection performance is evaluated using designated LOS standards. These, together with the procedures used to measure LOS, are summarized in Table 13. Intersection performance is measured by peak hour intersection capacity utilization (ICU) values. Applicable LOS standards are those of the individual jurisdictions in which the intersections are located.

TABLE 11
COMPARISON OF TRIP GENERATION TOTALS

Planning Area	Trip Type	AM Peak Hour				PM Peak Hour				ADT
		In	Out	Total	Percent ADT	In	Out	Total	Percent ADT	
Planning Area 1	Total	383	591	974	5.9	931	708	1,639	10.0	16,420
Planning Area 2	Total	991	1,478	2,469	8.7	2,162	1,745	3,907	9.1	42,953
Planning Areas 3 and 4	Total	4,166	4,026	8,192	8.7	4,634	4,788	9,422	10.1	93,735
TOTAL	**Total**	**5,540**	**6,095**	**11,635**	**7.6**	**7,727**	**7,241**	**14,968**	**9.8**	**153,108**
EIR Totals for Planning Areas 1–5[a]	Total	5,819	6,648	12,467	7.8	8,065	7,593	15,658	9.8	159,879
Internal/External for Planning Areas 1–4	Internal	2,258	2,258	4,516	6.2	3,434	3,434	6,868	9.4	73,033
	External	3,282	3,837	7,119	8.9	4,293	3,807	8,100	10.1	80,075
	Total	**5,540**	**6,095**	**11,635**	**7.6**	**7,727**	**7,241**	**14,968**	**9.8**	**153,108**
Percent Internal Tripends		40.8	37.0	38.8		44.4	47.4	45.9		47.7
EIR External for Planning Areas1–5	Total	3,412	4,241	7,653	9.1	4,534	4,062	8,596	10.2	84,173
Difference[b]	*Total*	*130*	*404*	*534*		*241*	*255*	*496*		*4,098*

ADT: Average Daily Traffic

[a] As a result of the ROSA that followed the approval of the Rancho Mission Viejo Planned Community, Planning Area 8, located east of San Clemente, became isolated from the remaining planning areas (the connecting roadway was deleted as were land uses along the connecting roadway). Hence, it is Planning Areas 1 through 5 that generate project traffic on the primary study area roadway system. The trip verification for EIR consistency purposes is therefore made for those five planning areas.

[b] The difference between the External Trips and the EIR External Trips calculated in Planning Areas 1–5 in FEIR 589.

Source: Stantec 2015.

TABLE 12
SOUTH COUNTY ROADWAY IMPROVEMENT PROGRAM SUMMARY

Location/Jurisdictions	Description of Improvements	Status of Improvement
City of Mission Viejo		
I-5: Saddleback Connector	Improvements per Caltrans design plans/PSR.	Future improvement.
Crown Valley Pkwy/I-5 Bridge widening	Improvements per Caltrans design plans.	Construction complete.
Oso Pkwy/I-5 Southbound Ramp	Improvements per Caltrans design plans.	Construction complete.
Oso Pkwy Widening (I-5 to Marguerite Pkwy)	Addition of a fourth lane in each direction.	Construction complete.
Felipe Rd/Oso Pkwy Intersection	Addition of a second southbound left-turn lane on Felipe Rd.	Future improvement.
Crown Valley Pkwy/Marguerite Pkwy Intersection	Addition of a second westbound left-turn lane, a fourth through lane, and a right-turn lane on Crown Valley Pkwy.	Construction complete.
City of San Juan Capistrano		
I-5/Ortega Hwy Interchange	Improvements per Caltrans/City design plans.	Under construction.
Ortega Hwy context-sensitive design in City	Improvements per Caltrans/City design plans/PSR.	Project in the design phase.
Rancho Viejo Rd/Ortega Hwy Intersection	Restripe southbound lanes and add a northbound right-turn lane on Rancho Viejo Rd.	Future improvement.
La Novia Ave/Ortega Hwy Intersection	Addition of a second left-turn lane in the eastbound direction on Ortega Hwy.	Future improvement.
Valle Rd/San Juan Creek Rd Intersection	Improvements per City Nexus program.	Requirement satisfied with recent improvements to the San Juan Creek Rd interchange.
I-5/Junipero Serra Rd	Improvements per Caltrans/City design plans/PSR.	Future improvement.
Camino Capistrano/Del Obispo St	Improvements per City Nexus program.	Maximum feasible improvements have been implemented by City.
City of San Clemente		
I-5/Southbound Ramp at Avenida Pico	Restriping of the southbound off-ramp and modifying the signal per Caltrans design plans/PSR.	Improvements under construction.
Camino Vera Cruz/Avenida Vista Hermosa Intersection	Addition of a second left-turn lane in the southbound direction on Camino Vera Cruz.	Future improvement.
Avenida La Pata/Avenida Vista Hermosa Intersection	–Addition of a southbound free right-turn lane on La Pata. –Addition of second and third eastbound left-turn lanes on Vista Hermosa.	Under contract for construction with the La Pata Ave improvements.

TABLE 12
SOUTH COUNTY ROADWAY IMPROVEMENT PROGRAM SUMMARY

Location/Jurisdictions	Description of Improvements	Status of Improvement
City of Laguna Niguel		
Crown Valley Pkwy/Railroad Bridge Improvement	Improvements per City Design.	Requirement may be satisfied as a result of the completed improvements on the I-5/Crown Valley Pkwy interchange.
Crown Valley Pkwy/Forbes Rd	Improvements per City 'Gateway' Project conditions.	Requirement may be satisfied as a result of the completed improvements on the I-5/Crown Valley Pkwy interchange.
Crown Valley Pkwy at Cabot Rd	Improvements per City 'Gateway' Project conditions.	Requirement may be satisfied as a result of the completed improvements on the I-5/Crown Valley Pkwy interchange.
Crown Valley Pkwy/I-5 Bridge widening	Improvements per Caltrans design plans/PSR.	Construction complete.
Avery Pkwy/I-5 Interchange	Improvements per Caltrans/City design plans.	Construction complete.
County Of Orange		
Oso Pkwy Widening: Meandering Trail to Solano	Addition of one lane in each direction.	Construction complete.
La Pata Ave construction and widening from Ortega Hwy to Avenida Vista Hermosa	Addition of one lane on La Pata Ave from Ortega Hwy to the landfill and construction of four lanes from the landfill to Calle Saluda.	Under construction.
Antonio Pkwy Widening: Ladera Ranch to Ortega Hwy	Addition of one lane in each direction and widen the bridge.	Construction complete.
Antonio Pkwy/Oso Pkwy Intersection	Addition of a fourth southbound through lane and a third northbound left-turn lane on Antonio Pkwy. Addition of a fourth through lane in the westbound direction on Oso Pkwy.	Project design is 95 percent complete.
Antonio Pkwy/La Pata Ave/Ortega Hwy Intersection	Addition of a second through lane and a free right-turn lane on Antonio Pkwy. Addition of a second northbound left-turn and a second through lane on La Pata Ave. Addition of a second eastbound through lane on Ortega Hwy.	Construction complete.
Antonio Pkwy/Crown Valley Pkwy Intersection	Addition of a second right-turn lane in the eastbound direction on Crown Valley Pkwy. Addition of a third left-turn lane in the northbound direction on Antonio Pkwy.	Project design is 95 percent complete.
Cow Camp Rd	Construction from Antonio Pkwy to Ortega Hwy.	Construction underway, to be completed with development of Planning Areas 3 and 4.

I: Interstate; Caltrans: California Department of Transportation; PSR: Project Study Report

Source: Stantec 2015.

TABLE 13
ARTERIAL INTERSECTION PERFORMANCE CRITERIA

	Performance Criteria Methodology
County of Orange	Level of Service (LOS) based on peak hour intersection capacity utilization (ICU), calculated using the following input values: Lane Capacity: 1,700 vehicles/hour Clearance Interval: 0.05 Right-Turn-On-Red Utilization Factor: 0.75 Deficiencies are identified as locations that exceed LOS D (ICU > 0.90).
Caltrans Intersections	LOS based on intersection control delay (average seconds per vehicle) as calculated during procedures contained in the Highway Capacity Manual (HCM). Deficiencies are identified as locations that exceed LOS D (average control delay > 55.0 seconds).

LOS Relationships – Signalized Intersections

LOS	Control Delay (Average seconds/vehicle)	ICU
A	≤10	<0.61
B	10–20	0.61–0.70
C	20–35	0.71–0.80
D	35–55	0.81–0.90
E	55–80	0.91–1.00
F	>80	>1.00

Source: Stantec 2015.

As shown in Table 15, five major study area intersections are identified for future improvements.[41] The SCRIP has timelines associated with the implementation of improvements, which are expressed as levels of development (i.e., equivalent dwelling unit [EDU]) rather than years).[42] The traffic study examines each intersection in relation to its timeline. The intent is to verify the future performance of each intersection and to determine whether the stated timeline needs to be moved forward to maintain level of service standards on the study area roadway system.

Table 14 summarizes the findings of the intersection performance analysis and Table 15 identifies the proposed SCRIP improvement at each location, the timing of the improvement, and if based on the most current analysis, the improvement can be deferred.

[41] The Camino Vera Cruz/Avenida Vista Hermosa Intersection, located in the City of San Clemente would not be significantly affected by the development of Planning Areas 3 and 4. As a result of the ROSA, the roadway that would have provided a north-south roadway through the Rancho Mission Viejo Planned Community was deleted as were land uses along the connecting roadway. Therefore, the development in Planning Areas 3 and 4 would not have a substantial influence on the LOS at the Camino Vera Cruz/Avenida Vista Hermosa Intersection.

[42] The metric used is an "equivalent dwelling unit" or EDU.

TABLE 14
INTERSECTION PERFORMANCE EVALUATION FOR SCRIP INTERSECTIONS WITHOUT IMPROVEMENTS

Location	Existing (2014)				2035			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
Felipe Rd and Oso Pkwy	0.71	C	0.73	C	0.82	D	0.87	D
Antonio Pkwy and Oso Pkwy	0.56	A	0.73	C	0.71	C	0.79	C
Antonio Pkwy and Crown Valley Pkwy	0.54	A	0.57	A	0.70	B	0.75	C
Rancho Viejo Rd and Ortega Hwy	0.62	B	0.69	B	0.78	C	0.91	E
La Novia Ave and Ortega Hwy	0.56	A	0.65	B	0.69	B	0.82	D

Source: Stantec 2015.

TABLE 15
PROPOSED SCRIP IMPROVEMENTS AND TIMING

Location	JUR	Improvement(s)	Development Milestone (EDU Trigger)[a]	Comments
Felipe Rd and Oso Pkwy	MV	Addition of a second southbound left-turn lane on Felipe Rd.	1-1000	Improvement not needed until 10000 EDU
Antonio Pkwy and Oso Pkwy	CO	Addition of a fourth southbound through lane and a third northbound left-turn lane on Antonio Pkwy. Addition of a fourth through lane in the eastbound direction on Oso Pkwy.	2501–5000	Needed before build-out of PA2 if "F" Street not constructed
Antonio Pkwy and Crown Valley Pkwy	CO	Restripe southbound lanes; Add northbound right turn lane	2501-5000	Could be deferred
Rancho Viejo Rd and Ortega Hwy	SJC	Restripe southbound lanes and add a northbound right-turn lane on Rancho Viejo Rd.	2501-5000	No change needed
La Novia Ave and Ortega Hwy	SJC	Addition of a second left-turn lane in the westbound direction on Ortega Hwy.	2501-5000	Could be deferred

JUR-jurisdiction; EDU-equivalent dwelling unit; MV-Mission Viejo; CO-County of Orange; SJC-San Juan Capistrano; PA2-Planning Area 2

[a] EDU is monitored monthly through the Master Development Table

Source: Stantec 2015.

As shown in Tables 14 and 15, only the Rancho Viejo Road and Ortega Highway intersection is projected to operate at a deficient level of service in 2035 with the addition of the development in Planning Areas 3 and 4 prior to implementation of the SCRIP improvements. The other improvements identified by the SCRIP program could be deferred until beyond the development milestone identified in the SCRIP program. The need for the improvement was identified in FEIR 589; hence the identification of the improvement in the SCRIP program. The following provides a discussion on each of the intersections and the recommended timing of the improvements:

- **Felipe Road and Oso Parkway Intersection.** Since the SCRIP was prepared, the City of Mission Viejo has carried out an update to its General Plan; as such, land use projections in the City have changed as have the long-range demographics in the surrounding area. The traffic forecasts given here show adequate capacity at this intersection for 2035 without the improvements. Since conditions can change in the future, the improvement should not be eliminated from the SCRIP, but the fair share contribution from the Rancho Mission Viejo Planned Community could be deferred to some later EDU milestone subject to a further agreement between the City and the County.
- **Antonio Parkway and Oso Parkway Intersection.** This intersection is shown to have adequate LOS through 2035. However, the construction of "F" Street (assumed for 2035) results in considerable traffic diversion from Antonio Parkway and hence, from this intersection. The traffic report for the Planning Area 2 Master Area Plan analyzed this intersection for buildout of Planning Area 2 without "F" Street, and found a PM ICU increase of .19 from existing. Based on the most recent existing count, this would result in an ICU of .92 by buildout of Planning Area 2 without "F" Street. Construction plans have been prepared for this intersection and actual construction is awaiting full funding. The findings of this traffic study indicate that priority should be given to pursuing the implementation of the planned improvements at this location.

- **Antonio Parkway and Crown Valley Parkway.** This intersection is shown to have adequate LOS through 2035. Should the County implement improvements within this time frame, the fair share contribution noted in the SCRIP as before 5,000 EDU could be made at that time.

- **Rancho Viejo Road and Ortega Highway.** The 2035 ICUs for this intersection show LOS E for the PM peak hour. The planned improvements will be the joint responsibility of Caltrans and the City of San Juan Capistrano. Given that the ICU value is forecasted to only just exceed the performance threshold by 2035, the need for those improvements would likely be beyond the 5,000 EDU timeline for the Rancho Mission Viejo Planned Community contribution under the SCRIP. Hence, this location can be monitored over time and the fair share contribution made at the time improvements are implemented. With the implementation of the SCRIP improvement identified in Table 15, the intersection would operate at an adequate level of service.

- **La Novia Avenue and Ortega Highway.** This intersection is shown to have an adequate LOS through 2035. Should the City and Caltrans implement improvements within this time frame, the fair share contribution noted in the SCRIP as being made before 5,000 EDU, could be made at that time.

Alternative Transportation Modes

The Project would not conflict with adopted policies, plans, or programs pertaining to alternative modes of transportation. The Master Area Plan incorporates a number of pedestrian and bicycle trails (including the San Juan Creek Class I Regional Bikeway Trail) and makes provisions for the implementation of the San Juan Creek Regional Riding and Hiking Trail. These facilities provide opportunities for alternative non-motorized transportation modes. Though there are no planned transit stops at this time, as the Rancho Mission Viejo Planned Community builds out, the need for transit stops may be evaluated in the future.

The Project would not result in a change in air traffic patterns or result in substantial safety risks. John Wayne Airport is the closest commercial airport, which is located approximately 18 miles from the Project site. There are no private airstrips in the vicinity of the Project site.

Improvements within Caltrans Right-of-Way

The design of Cow Camp Road at SR-74 will be coordinated with Caltrans to ensure that the design of the roadway (either a roundabout or intersection) is compatible with SR-74's existing rural two-lane design. The sizing of the Cow Camp Road connection to SR-74 would be determined during the final design of the roadway. Sizing would also be confirmed by the traffic analysis to ensure there is adequate roadway capacity while minimizing environmental impacts when crossing San Juan Creek and to ensure a safe design on SR-74. Similarly, the design of the currently unnamed access road in Planning Area 4 will need to be coordinated with Caltrans.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any new transportation impacts, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 99 through 103 and 543 through 554.2 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

The cumulative analysis in FEIR 589 with the Rancho Mission Viejo Planned Community established that, with the proposed mitigation program, impacts would be less than significant with the exception of three intersections (Marguerite Parkway at Crown Valley Parkway in the City of Mission Viejo; Camino Capistrano at Del Obispo Street in the City of San Juan Capistrano; and the I-5 southbound ramp intersection at Avenida Pico in the City of San Clemente). The mitigation included the payment of SCRIP fees.

To address the contribution of the Rancho Mission Viejo Planned Community on deficient intersections located outside the County's jurisdiction, the County will enter into agreements with the affected jurisdictions regarding the design and construction of the improvements and the transfer of monies paid towards funding these improvements. However, if the County is not able to reach an agreement with one or more of the jurisdictions to implement these improvements, consistent with the findings of FEIR 589, the impacts to be mitigated by those improvements may remain significant and be unavoidable. Additionally, the Rancho Mission Viejo Planned Community's contribution to impacts on freeway mainline segments that are forecasted to operate deficiently would be considered significant and unavoidable. This conclusion was included in the Findings of Fact and Statement of Overriding Considerations adopted by the Board of Supervisors on November 8, 2004. Though the Planning Areas 3 and 4 Project provides improved circulation for the area (the extension of Cow Camp Road, "K" Street, and other internal roadways) and is component of the overall improvements envisioned for the Rancho Mission Viejo Planned Community, the Project contribute to the significant unavoidable impacts identified in FEIR 589 and the associated Findings of Fact and Statement of Overriding Considerations adopted by the Board of Supervisors. Therefore, this Statement of Overriding Considerations would continue to apply to this Addendum.

Finding of Consistency With Final EIR 589

As discussed above, Planning Areas 3 and 4 would contribute to cumulative traffic impacts. However, these findings are consistent with the conclusions of FEIR 589. When certifying FEIR 589, the County Board of Supervisors adopted a Findings of Fact and a Statement of Overriding

Considerations addressing these impacts. This Statement of Overriding Considerations would continue to apply to this Addendum for Planning Areas 3 and 4.

The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

4.17 UTILITIES AND SERVICE SYSTEMS

Summary of Previous Findings

FEIR 589 identified the impacts associated with construction of a full network of utility services required to support the Rancho Mission Viejo Planned Community. This includes a number of water reservoirs and pump stations. Most of these facilities are proposed within the footprint of the development areas; however, due to design requirements to accommodate gravity flows, some facilities are proposed in open space areas. The impacts of these facilities are addressed as part of the impact assessment for the overall planned community.

The Rancho Mission Viejo Planned Community requires the construction of a number of storm water facilities to accommodate the flows associated with development. This included construction of basins to retain water during peak flows in order to avoid impacts off site. The footprint for these facilities is included in the acreage identified as part of the development footprint described in FEIR 589.

FEIR 589 determined that, using both the California Integrated Waste Management Board (CIWMB) and County Integrated Waste Management District solid waste generation factors, there was sufficient capacity at the Prima Deshecha landfill to accommodate the projected daily tonnage generated by implementation of the Rancho Mission Viejo Planned Community.

No significant, unavoidable impacts to utilities and service systems were identified in FEIR 589.

Project Impact Analysis

a) Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

b) Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?

c) Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which would cause significant environmental effects?

d) Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

e) Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?

The utilities and service impacts have been previously analyzed as part of FEIR 589, which was prepared and certified pursuant to State and County CEQA Guidelines. Minor updates are needed to make the previous document adequate to cover the actions that are currently proposed, which are documented below and serve as an Addendum to FEIR 589.

Wastewater

The wastewater generated by the Project has been integrated into the SMWD Plan of Works for the service area. Wastewater would be treated at the Chiquita Water Reclamation Plant (CWRP), which would have sufficient capacity to ensure all wastewater treatment meets the requirements of the San Diego Regional Water Quality Control Board.

As discussed in Section 2.8.4, the recently approved CWRP Expansion Project involves the upgrade and expansion of the preliminary, primary, secondary, and tertiary wastewater treatment systems. The expansion would be accommodated within the existing area designated in the SSHCP for the plant facilities. Environmental clearance for the expansion has been addressed through a separate CEQA document (a Mitigated Negative Declaration) approved by the SMWD Board of Directors in February 2014.

As discussed in the Project Description and depicted on Exhibit 7, two sewer lift stations would be constructed—one each in Planning Subareas 3.8 and 4.1. The proposed lift station would collect sewage flows emanating from Planning Areas 3 and 4, then pump it to the Chiquita Water Reclamation Plant located northwest of the Project site near Planning Area 2. The facilities would be housed in a structure. SMWD would be the lead agency for the construction of the lift stations. These facilities would be located within the development area and would not result in any additional disturbance area.

Stormwater

As depicted in Exhibit 8, the Project proposes a network of storm drains that would serve the new development. The facilities would include 11 outfalls to San Juan Creek and 1 outfall to Cañada Gobernadora. All the storm drain systems collect local drainage from street inlets within the development and discharge into water quality basins and hydrologic mitigation basins prior to ultimately discharging to the existing natural canyon floodplains via outfalls. The interior drainage within the development will be designed to ensure that 100-year flood protection is provided to habitable structures. Additionally, the Project has been designed to provide sufficient storage for runoff volumes to mitigate increases in peak discharges to offset impacts of existing development. The collection facilities would be located within the development area. The outfalls located outside the development area were assumed as part of the infrastructure overlay when the impacts were assessed in FEIR 589. Therefore, the impacts associated with the construction of the storm drain improvements were previously evaluated.

Water Supply

FEIR 589 included the analysis from the water supply assessment (WSA) prepared by the SMWD pursuant to Senate Bill (SB) 610 and SB 221. As a part of the preparation of the WSA, the SMWD identified the approximate water demand associated with implementation of the Rancho Mission Viejo Planned Community. The average total water demand (domestic and non-domestic) at full buildout under normal consumption conditions would be 16,874 acre-feet per year (afy). According to information provided in the WSA and its supporting studies, the Metropolitan Water District (MWD) would meet with existing supplies all regional water demands for imported water. The projected water demand for the Rancho Mission Viejo Planned Community was substantially accounted for in SMWD's 2000 Urban Water Management Plan and has continued to be accounted for in the subsequent updates to that plan.

In accordance with Government Code Section 66473.7 (enacted by Senate Bill 221, 2001), a Water Supply Verification (WSV) is required to be prepared and approved by the SMWD Board prior to the County's approval of final tract maps for Rancho Mission Viejo Planned Community. Each WSV provides (i) written confirmation that the water demands of a specific development proposal (e.g., Planning Area) within the Rancho Mission Viejo Planned Community are within the demands identified by the WSA, and (ii) verification of the availability of a sufficient water supply to meet the projected demands, in addition to existing and planned future uses. A WSV for the entirety of Planning Area 2 was approved by the SMWD Board on August 22, 2014. The supply and demand comparisons in that WSV reflect the updated supply and demand numbers incorporated in SMWD's most recent UWMP that was approved in June 2011 and that extends the supply and demand projections to 2035. The analysis was able to substantiate that SMWD has the capacity to meet the projected 20-year water demand associated with Planning Area 2, in addition to SMWD's existing and planned future uses (which includes the entirety of the Rancho Mission Viejo Planned Community). Although not required to meet projected demands, SMWD has, or will have available, additional local supplies to provide a margin of safety. A similar WSV will be required in conjunction with the final tract maps for Planning Areas 3 and 4.

Improvements to meet the water demand of the Rancho Mission Viejo Planned Community is a component addressed in FEIR 589. Identified improvements include both domestic and non-domestic water lines and reservoirs. For Planning Areas 3 and 4 there would be a need for four domestic water reservoirs and three non-domestic water reservoirs. The reservoirs would provide storage facilities to provide the Project with water to meet operational needs, fire-flow volumes, and emergency storage. The vast majority of these facilities are within the development footprint; therefore, there would be no additional impacts associated with their implementation. However, FEIR 589 did identify that, due to design requirements, Planning Area 3 would have a domestic water reservoir serving Zone 3 located in open space (Habitat Reserve) area.[43] As identified in the Section 3.0 of this Addendum, the precise location and size of the facility will be determined at the time tentative tract maps are processed. However, FEIR 589 did assume an approximate location and pad size to ensure that the potential impacts of these facilities are included in the impact assessment for the Project. This is consistent with the assumption in the Master Area Plan for Planning Area 3. These impacts are consistent with the analysis in FEIR 589 and further evaluation is not required, provided at the time of design, the impacts are consistent with these assumptions.

[43] For the domestic and non-domestic water systems, SMWD divides the area into five pressure zones. These are based on service area elevations. Zone 3 covers areas between 700 and 900 feet in elevation.

Solid Waste Disposal

The solid waste disposal needs of the Rancho Mission Viejo Planned Community were evaluated in FEIR 589 using waste generation rates provided by the California Integrated Waste Management Board (CIWMB). The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) required all counties to prepare a County Integrated Waste Management Plan ("CIWMP"). In 2007, subsequent to the certification of FEIR 589, the County of Orange adopted the *Strategic Plan Update to the Regional Landfill Options for Orange County* (RELOOC), which provides a 40-year strategic plan for waste disposal for Orange County. OC Waste & Recycling uses long-range population projections when planning for the solid waste disposal needs in the County; therefore, the growth associated with the approved Rancho Mission Viejo Planned Community would have been incorporated into the projections in the RELOOC. Additionally, the waste disposal service would be required to abide by the applicable waste reduction and recycling programs required under existing regulations (i.e., AB 939 and the California Mandatory Commercial Recycling Law [AB 341]). The latter Assembly Bill went into effect in 2012; therefore, the expected solid waste generated by the Rancho Mission Viejo Planned Community, including Planning Areas 3 and 4, would reasonably be less than what was assumed in FEIR 589. Additionally, *The Ranch Plan Solid Waste Management Plan* requires the reusing and recycling of construction debris to minimize the amount of inert construction waste in the landfills. As part of that plan, all builders are required to divert at least 50 percent of all construction wastes from the landfill.

Electrical Facilities

FEIR 589 identified the need for an electrical substation in Planning Area 3. The substation was intended to serve more than just the Rancho Mission Viejo Planned Community. As previously discussed in Section 2.7.1, SDG&E needed to bring the substation online prior to any development in the Rancho Mission Viejo Planned Community. The facility was sited and built in Planning Area 2. Therefore, the facility is not needed in Planning Area 3.

The Project requires the relocation of existing power lines and modification of the current SDG&E easement. FEIR 589 identified the need to relocate approximately 3,000 linear feet of 138-kV electricity transmission lines within the Rancho Mission Viejo Planned Community. No significant impacts were identified with the relocation of the utility lines. SDG&E would be responsible for this modification. California Public Utilities Commission (CPUC) action should not be required. Pursuant to CPUC General Rule 131-D, approval by the CPUC is not required for "the minor relocation of existing power line facilities up to 2,000 feet in length, or the intersetting of additional support structures between existing support structures" or "for power lines or substations to be relocated or constructed which have undergone environmental review pursuant to CEQA as part of a larger project, and for which the final CEQA document (Environmental Impact Report [EIR] or Negative Declaration) finds no significant unavoidable environmental impacts caused by the proposed line or substation" (CPUC 1995) Both of these provisions would apply to the actions required for Planning Areas 3 and 4.

With the implementation of the FEIR 589 mitigation program, impacts to utilities and service systems would be mitigated to a less than significant level. The implementation of Planning Areas 3 and 4 would not result in any new or more severe impacts than those assumed in FEIR 589.

Improvements within Caltrans Right-of-Way

No substantial impacts to utilities or service systems would be associated with the improvements within the Caltrans right-of-way. The Project would extend utilities and storm drains across SR-74; however, lateral encroachment of utilities in SR-74 are not anticipated. Coordination with Caltrans

as part of the encroachment permit process would ensure the design of facilities meets Caltrans requirements.

Mitigation Program

As a part of FEIR 589, a mitigation program was adopted, which minimizes impacts associated with implementation of the Rancho Mission Viejo Planned Community. The Master Area Plans, Subarea Plans, and associated improvements for Planning Areas 3 and 4 are consistent with the original approvals and impacts identified in FEIR 589. The Project would not result in any new impacts to utilities and service systems, nor would it increase the severity of a previously identified significant impact as previously analyzed in FEIR 589. No new mitigation is required. Please refer to Items 201 through 201, 224, 253, and 589.1 through 599 in the RCM in Appendix A to this Addendum for measures applicable to Planning Areas 3 and 4.

Level of Significance After Mitigation

Consistent with the findings of FEIR 589, with implementation of the mitigation program provided in Appendix A, the Rancho Mission Viejo Planned Community, which includes Planning Areas 3 and 4, would not result in any significant unavoidable impacts associated with potential impacts to utilities and service systems.

Finding of Consistency With Final EIR 589

As discussed above, construction of development in Planning Areas 3 and 4 would have no significant impacts on utilities and service systems. The County of Orange has determined, on the basis of substantial evidence in the light of the whole record, that the Planning Areas 3 and 4 Project (Master Area Plan, Subarea Plans, and associated infrastructure improvements) does not propose substantial changes to the Rancho Mission Viejo Planned Community; that no substantial changes would occur that would require major revisions to FEIR 589 due to new significant impacts; and that no new information of substantial importance has been revealed since the certification of FEIR 589. Therefore, since none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred, an Addendum to FEIRs 589 and FEIR 584 is the appropriate document for CEQA compliance.

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Permits: PA140072 (PA3 & PA4 Addendum)

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Permits: PA140072 (PA3 & PA4 Addendum)

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX A

PLANNING AREAS 3 AND 4 REGULATION COMPLIANCE MATRIX

PLANNING AND ZONING CLEARANCE

THESE PLANS AND DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN COMPLIANCE WITH THE APPLICABLE LAND USE REGULATIONS. ISSUANCE OF A PERMIT IS RECOMMENDED SUBJECT TO APPROVAL BY OTHER DEPARTMENTS AND ANY NOTED CONDITIONS. THIS APPROVAL DOES NOT RELIEVE THE ENGINEER OF RECORD OF THEIR RESPONSIBILITY TO PREPARE THE PLANS, SPECIFICATIONS, MAPS, AND OTHER RECORD DOCUMENTS PER CURRENT CODES AND APPLICABLE STANDARDS OF PRACTICE.

ATKINS NORTH AMERICA, INC.

March 03, 2015

Signature
Date:

PA140072

Permits: PA140072 (PA3 & PA4 Addendum)

PLANNING AREAS 3 AND 4 REGULATION COMPLIANCE MATRIX

In conjunction with the approval of the Rancho Mission Viejo Planned Community project, the County Board of Supervisors adopted a Mitigation Monitoring and Reporting Program (MMRP) pursuant to Public Resources Code Section 21081.6. The MMRP included all the project design features (PDF), standard conditions (SC), and mitigation measures (MM) that were adopted concurrently with and as a condition of approval of the project. In addition, there are other compliance measures that apply to the Rancho Mission Viejo Planned Community that also serve to reduce environmental impacts. These include provisions from the following:

- Development Agreement requirements
- Planned Community Zoning Regulations/Conditions
- South County Roadway Improvement Program (SCRIP) requirements
- Litigation Settlement Agreement requirements
- Service Provider Agreement requirements

Recognizing the number of conditions that apply to the Rancho Mission Viejo Planned Community, a program for monitoring their implementation was developed. The program, called the Regulation Compliance Matrix (RCM), recites and categorizes all of the project's mitigations (from the MMRP), conditions, and other project requirements adopted with the initial approving actions and has been supplemented with added requirements as more detailed plans and programs are approved for the Rancho Mission Viejo Planned Community. The RCM represents a single source of the project's requirements that will be maintained and available for application to subsequent entitlement plans.

The program allows for the sorting of the measures to determine which measures are applicable to each portion of the Rancho Mission Viejo Planned Community (i.e., by planning area and type of project), as well as at each level of entitlement. The measures within the RCM applicable to the approvals for Planning Areas 3 and 4 (Master Area Plan, Subarea Plans, tentative tract maps, roadway construction, grading permits, site development permits, and other supporting infrastructure) have been included as Attachment A to this Addendum. No additional measures or modifications to the existing measures are required for Planning Areas 3 and 4.

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Permits: PA140072 (PA3 & PA4 Addendum)

RANCHO MISSION VIEJO PLANNED COMMUNITY
PLANNING AREAS 3 AND 4 ADDENDUM REGULATION COMPLIANCE MATRIX

Background:
On November 8, 2004, the Orange County Board of Supervisors approved the Ranch Plan project subject to 599 requirements and provisions. These requirements and provisions were detailed in several approving documents, agreements and instruments used to implement the project over time. Subsequent OC Board of Supervisor actions and other agency actions have also been approved that supersede or superimpose the original OC Board of Supervisor action. These include settlement agreements, OC Board of Supervisor actions, as well as Federal, State and local agency actions that add specific requirements and provisions for project implementation.

Summary:
The Ranch Plan Regulation Compliance Matrix (Matrix) is a compendium of all of the regulations, conditions, provisions, mitigation measures, project design features and standard conditions applicable to the Ranch Plan project since its original approval in November of 2004 by action of the Orange County Board of Supervisors and subsequently by other applicable agencies. It is intended to be used in an electronic format as an official common and on-going record to assist staff and applicants in project review and implementation. The matrix format provides a variety of information about each item such as original source documents, timing, approving authority, form of compliance and area of application. The items are also cross referenced where duplicated and listed elsewhere in the matrix.

Vesting:
The Ranch Plan Planned Community approvals are vested by virtue of the Development Agreement (DA) and vesting tentative tract maps. Among other things, the Development Agreement establishes with certainty the scope of benefits to the public and the exactions to be contributed by the project proponent. Other ancillary approved programs and agreements such as (but not limited to) the Affordable Housing Agreement, Open Space Agreement, Fire Protection Program, Alternative Development Standards, the Guidance Documents for the PC zoning, and this Regulation Compliance Matrix, all further define the vested project entitlements and help ensure the orderly and timely development of the project in accordance with the project's vested rights. Additional federal and state programmatic environmental agency permits that have been obtained for the Ranch Plan further help to define the Ranch-wide conditions and administrative protocols for subsequent permit processing.

The following list of items are included in the Matrix and defined below:

- **Mitigation Measure (MM)** – Project specific mitigating measure identified where a potentially significant environmental effect has been identified and is not reduced to a level considered less than significant through the application of other regulations, project design features or standard conditions.
- **General Regulation (Gen. Reg.)** – Either a condition or entitlement provision applied to the project.
- **Condition (Cond.)** – An applied requirement of the project based on local, state or federal regulations or laws.
- **Entitlement Provision** – An approved project-enabling feature providing program explanation for the purpose of organization, operation or guidance.
- **Public Benefit** – Provision identifying a certain public facility improvement from the adopted Development Agreement (DA) between the County and Rancho Mission Viejo (effective December 8, 2004) that is to be provided in connection with implementation of the project.
- **Project Design Feature (PDF)** – Specific design elements intended to prevent the occurrence of, or reduce the significance of, potential environmental effects. Because PDF's have been incorporated into the project, they do not constitute mitigation measures as defined by CEQA and may be expressed as a condition or provision, providing explanation for how implementation of the approved project reduces potential impacts.
- **Standard Condition (SC)** – An applied requirement of the project based on local, state, or federal regulations or laws that are frequently required independently of CEQA review and also serve to offset or prevent specific impacts. OC Planning retains a "library" of standard conditions that are applied to all development applications. The Standard Conditions wording included in EIR 589 are circa 2004, and while the intent of each condition must be met, the interpretation, timing and responsible party information may change with time, except as provided in the Development Agreement.

Guidance Annotations:

Throughout the Matrix guidance annotations have been added to provide updates, explanation and guidance. Since the original Ranch Plan approvals, a number of OC Board of Supervisors and other agency actions have occurred which supersede or superimpose the Ranch Plan requirements and provisions as adopted by the Board of Supervisors November 8, 2004. These actions are listed below and annotations (also see ANNOTATIONS LEGEND below) are used to reflect changes in the matrix items. This list may be updated as new County or other agency-adopted actions affect Ranch Plan implementation, to the extent allowed under the Development Agreement.

(1) **Settlement Agreement** between the County of Orange, Rancho Mission Viejo and Endangered Habitats League, et al. ("Resource Organization Settlement Agreement", or "ROSA") approved by Board of Supervisors on August 16, 2005,

(2) **Southern Subregion NCCP/MSAA/HCP** ("Southern HCP") approved by Board of Supervisors by Resolution No. 06-202 on October 24, 2006, and by U.S. Fish & Wildlife Service on January 10, 2007 – including associated Implementation Agreement and Incidental Take Permit

(3) **Special Area Management Plan** ("SAMP") for the San Juan Creek and Western San Mateo Creek Watersheds approved by U.S. Army Corps of Engineers on March 16, 2007

(4) **Ranch Plan Fire Protection Program** approved by Board of Supervisors on July 31, 2007

(5) **Zoning Code Amendments** CA04-01, CA-05-01 and CA 08-01, as approved by Board of Supervisors (most recently on August 12, 2008)

(6) **County Reorganization and Department Name Changes** approved by Board of Supervisors on March 18, 2008 (Resolution 08-023)

(7) **Annexation of 132 acres of PA1 to the City of San Juan Capistrano** approved by LAFCO Resolution CA 09-19 on December 9, 2009

Notes:

- Project Design Features are listed in EIR 589, but are not listed in this matrix, as they are not specific PA1 requirements.
- Project-enabling features providing program explanation for the purpose of organization, operation or guidance are listed in EIR 589, but are not listed in this matrix, as they are not specific PA1 requirements.

The following legend identifies five forms of supplemental annotation and their application within the Guidance Document:

LEGEND

Red Bold Text Supersedes as the result of (1) through (7) listed above.

Blue Text Clarifying inserts intended to aid staff and applicants in their understanding and interpretation of certain requirements, provisions and supporting information are based upon staff review and adopted actions (1) through (6) listed above.

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
5	463, (ROSA section 3.7)	EIR 589	MM 4.3-1	In conjunction with approval of an Subarea Plan for portions of PA 1 and PA 3 where existing residential units would be displaced	Population and Housing	Existing Residential Units	Replacement Housing Residential Units	In conjunction with approval of an Area Plan for those portions of Planning Areas 1 and 3 where existing residential units would be displaced, the applicant shall provide evidence of relocation of any remaining residents.	~~Director, PDS~~ **Director, OC Planning**	Submittal of evidence of relocation of any remaining residents	Complete for PA1: employee housing in PA1 were demolished (DM060125, DM070014-DM070018 and DM070021) and employee housing in PA3 was constructed (RS070456-RS070459)	PA-1 and PA-3
6	7-12 (MM 4.4-1)	EIR 589	MM 4.4-1	Prior to the approval of each ~~the first~~ tentative tract map in each Planning Area	Geology and Soils	Geotechnical Report, Grading Code, Grading Manual	Preliminary Geotechnical Report Submittal Requirements	Prior to the approval of each ~~the first~~ tentative tract map in each Planning Area, the applicant shall submit a geotechnical report to the **Director, OC Planning** ~~Deputy Director, Planning and Development Services~~, for approval. The report shall meet the requirements outlined in the County of Orange Grading Code and Manual, and as appropriate, shall adequately address each of the following issues to the satisfaction of the Deputy Director, Planning and Development Services:	~~Director, PDS~~ **Director, OC Planning**	Preparation and submittal of satisfactory geotechnical report addressing required elements	This TT Map geotechnical report is to be qualitative, not quantitative, providing an overview of the site's geologic conditions, demonstrating understanding of geotechnical issues, and how they are to be remediated. A more complete subsurface investigation is to be performed prior to issuance of a grading permit (Item No. 521, SC 4.4-1).	Each PA
7	6 and 8-12 (MM 4.4-1)	EIR 589	MM 4.4-1 (cont.)	See above	Geology and Soils	Geotechnical Report, active faults, structural setbacks	Define and Map Active Faults	a. Locate, define and map the activity status of any faults within the development area of the project site, and if any active faults are encountered, determine the appropriate structural setbacks.	~~Director, PDS~~ **Director, OC Planning**	The purpose of the TT Map study is to identify fault locations per published maps and literature. The Grading Permit study will define limits and activity as necessary.	See Above	Each PA

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
8	6-7 and 9-12 (MM 4.4-1)	EIR 589	MM 4.4-1 (cont.)	See above	Geology and Soils	Geotechnical Report, unconsolidated soils	Identify and Map Unconsolidated Soils	b. Identify and map areas where grading activities may encounter unconsolidated soils (e.g., alluvial deposits, colluvium, native soil, debris flow deposits, etc.) susceptible to soil creep, liquefaction, landslides, or settlement. Define specific measures to be taken when such soils are encountered during grading (i.e., removal and replacement with compacted fill, slope stabilization, etc.).	~~Director, PDS~~ **Director, OC Planning**	The purpose of the TT Map study is to identify soil types and boundaries. The Grading Permit study will further define soil types and boundaries as necessary.	See Above	Each PA
9	6-8 and 10-12 (MM 4.4-1)	EIR 589	MM 4.4-1 (cont.)	See above	Geology and Soils	Geotechnical Report, Fill on top of unconsolidated soils	Fills on Top of Unconsolidated Soils	c. Identify and map areas where fill is to be placed on top of unconsolidated soils (e.g., alluvium, colluvium, landslide debris, etc.). Define specific measures to be taken when such fills are anticipated during grading (i.e., removal and re-compaction of unconsolidated soils, settlement monitoring in deep canyon areas, etc.).	~~Director, PDS~~ **Director, OC Planning**	The purpose of the TT Map study is to identify where fill is to be placed on top of unconsolidated soils. The Grading Permit study will further define these areas as necessary.	See Above	Each PA
10	6-9 and 11-12 (MM 4.4-1)	EIR 589	MM 4.4-1 (cont.)	See above	Geology and Soils	Geotechnical Report, landslides	Locate and Map Landslides	d. Locate and map all landslides within the development area of the project site and evaluate the lateral extent, depth and potential instability as a result of grading and the potential effects of settlement due to fill loads. Define specific measures to be taken during grading (i.e., bury under proposed fills, complete or partial removal, slope stabilization, avoidance, etc.).	~~Director, PDS~~ **Director, OC Planning**	The purpose of the TT Map study is to identify landslides per published maps, preliminary exploration, surface mapping & observations, and anticipated limits of remediation. The Grading Permit study will further define the extent and limits of the landslides as necessary.	See Above	Each PA
11	6-10 and 12 (MM 4.4-1)	EIR 589	MM 4.4-1 (cont.)	See above	Geology and Soils	Geotechnical Report, slumping, debris flow, debris basin	Debris Flows and Slumping Areas	e. Identify and map areas susceptible to debris flows and surficial slumping, including potential debris flow volumes. Define specific measures to be taken during grading (i.e., removal during mass grading, containment within a debris basin, etc.).	~~Director, PDS~~ **Director, OC Planning**	The purpose of the TT Map study is to identify areas of potential debris flows. The Grading Permit study will further define quantities and remedial measures as necessary.	See Above	Each PA

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
12	6-11 (MM 4.4-1)	EIR 589	MM 4.4-1 (cont.)	See above	Geology and Soils	Geotechnical Report, expansive soils	Expansive Soils Areas	f. Identify areas susceptible to expansive soils and specific measures to be taken during grading (i.e., pre-saturation of expansive soils during construction, reinforcement of building foundations and concrete slabs, removal and replacement with non-expansive granular soil beneath structures, etc.).	Director, PDS **Director, OC Planning**	The purpose of the TT Map study is to identify and map areas susceptible to expansive soils. It should be understood that expansive soils could end up throughout the site as a result of grading.	See Above	Each PA
14	15-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP	ROMP Standards and Specifications	Prior to the approval of the first Area Plan, or other planning level approval, for any part of the Ranch, the applicant shall prepare a detailed Runoff Management Plan ("ROMP") that shall be approved by the Manager, Flood Control Division, and the Manager, Watershed and Coastal Resources Division, and that meets the following standards and specifications:	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	The May 20, 2009 OC Flood Letter [Hyperlink #1a] provides approval of the baseline hydrologic analysis for the 2-yr thru 100-yr EV storm events and the July 14, 2009 OC Flood Letter [Hyperlink #1] provides conditional approval of the 2-year through 100-year Expected Value impact analysis, and the Planning Level Regional Detention Basin Strategy. All other conditions listed on pages 2 and 3 of July 14, 2009 OC Flood Letter are not yet satisfied. These conditions are still outstanding and need to be addressed in the future by RMV per Orange County criteria including the Orange County Hydrology Manual and its addendum ("OCHM), the Orange County Flood Control Design Manual	PC-Wide

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
											("FCDM), and any other County criteria and/or standards that are applicable.	
15	14 and 16-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, OCHM, FCDM, Hydrology Manual, Flood Control Design Manual	Ranch-wide ROMP Criteria	a. The ROMP shall cover the entire Ranch within the regional watersheds (San Juan Creek and San Mateo Creek) and sub-watersheds affected by the Area Plan or other planning level approval, and shall be consistent with Orange County criteria including the Orange County Hydrology Manual and its addendum ("OCHM), the Orange County Flood Control Design Manual ("FCDM), and any other County criteria and/or standards that are applicable.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	The approved and conditionally approved portions of the ROMP listed in Item #14 above are for the San Juan Creek watershed only. The San Mateo Creek watershed needs to be addressed in a separate ROMP in the future.	PC-Wide
16	14-15 and 17-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, San Juan Creek watershed, San Mateo Creek watershed	ROMP San Juan and San Mateo Watershed Requirements	b. The ROMP shall separately cover the San Juan Creek watershed or the San Mateo Creek watershed, depending on the Ranch Plan development proposed and the regional and sub-watershed(s) affected. For the San Juan Creek watershed, the ROMP shall extend to the downstream boundary of the Ranch. For the San Mateo Creek watershed, the ROMP shall extend to the County border for those portions of the Ranch Plan area that are located within the watershed.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	The approved and conditionally approved portions of the ROMP listed in Item #14 above are for the San Juan Creek watershed only. The San Mateo Creek watershed needs to be addressed in a separate ROMP in the future.	PC-Wide

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
17	14-16 and 18-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, USACOE hydrology application	ROMP Approval for GPA/ZC and USACOE	c. The ROMP shall be separate from the preliminary analyses submitted as part of the GPA/ZC submittals using the U.S. Army Corps of Engineers HEC-1 hydrology application.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Items Nos. 14 - 15	PC-Wide
18	14-17 and 19-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, OCHM, FCDM	ROMP Level of Detail	d. The ROMP shall be accomplished to a greater level of detail using criteria established by the OCHM and the FCDM.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15	PC-Wide
19	14-18 and 20-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map	Water Resources	Ranch-wide ROMP, baseline conditions, mitigation measures	ROMP Evaluation of Impacts and Mitigations	e. The ROMP shall re-evaluate and verify baseline conditions, project conditions for all phases of development, post-project conditions, impacts of the development through all phases and scenarios of development, and mitigation measures needed to ameliorate development impacts through all the phases and scenarios of development (including the full Ranch Plan development) within the affected watershed(s), all	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	Pursuant to the Ranch Wide ROMP, Chapter 19, the applicant shall submit an updated flow analysis by Planning Area to address changes in flow including development phasing as applicable (i.e. Planning Area 2.1 & 2.2 or 2.3 & 2.4). The flow	Each PA and immediate water-shed

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
				approvals and prior to rough grade plan approvals.				accomplishing criteria established by the OCHM and FCBM.			analysis may include extended areas of the watershed(s) beyond the Planning Area boundary for analysis and mitigation as necessary. The analysis will be completed and approved with facility locations and sizing prior to rough grading (GA) permit issuance for each development phase.	
20	14-19 and 21-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, sediment, erosion	ROMP Analysis of Sediment and Erosion Potential	f. The ROMP shall analyze existing conditions, potential impacts, and proposed mitigation measures for sediment mass balance, watershed sediment yield, sediment transport and the stability of the creek and watersheds and/or increased erosion potential and other hydraulic characteristics of the creeks and watersheds (San Juan Creek and San Mateo Creek) within the project site and off-site to the La Novia Bridge for development within the San Juan Creek watershed and to the County boundary for development within the San Mateo Creek watershed for all phases of the development.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15 and 19. In addition, documentation and analyses for review, comment and approval need to be provided in the future by RMV in order to fulfill the erosion, sedimentation and channel stability Requirements of item no. 20.	PC-Wide
21	14-20 and 22-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed	Water Resources	Ranch-wide ROMP, peak discharge, runoff volume, channel stability	ROMP Analysis of Adverse Impacts	g. The ROMP shall analyze and demonstrate that development of the Ranch Plan will not produce adverse impacts during 2-, 5-, 10-, 25-, 50- and 100-year events, including but not limited to increases in runoff peak discharge, increases in runoff volume, channel aggradation/degradation, erosion and channel stability within the project site and off-site from the headwaters of	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15 and 19-20.	PC-Wide

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				at the level of Tentative Map approvals and prior to rough grade plan approvals.				the watershed to the Ortega Bridge for development within the San Juan Creek watershed, and to the County boundary for development within the San Mateo watershed for portions of the streamcourse potentially impacted by the project development. The analyses set forth in the ROMP shall be for existing conditions and for all phases of development, including with and without required mitigation measures.				
22	14-21 and 23-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, storm drain facilities, basins, BMP concept plan	ROMP Flood Control and Storm Drain Facilities	h. The ROMP shall analyze in sufficient detail to enable the size and alignment of flood control and storm drain facilities, and site selection choices for the retarding basins, water quality detention basins and other mitigation measures to be more precisely evaluated and established. The ROMP should include the preparation of a water quality site design BMP concept plan. The applicant shall work with the County to provide the level of design detail in these facilities that is appropriate to the level of planning and approval at each project phase.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15 and 19-20. In addition, documentation and analyses for review, comment and approval by the County as well all applicable jurisdictional authorities need to be provided in the future by RMV in order to fulfill BMP and all applicable water quality Requirements of item no. 22.	PC-Wide
23	14-22 and 24-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, ownership , maintenance responsibilities	ROMP Ownership and Maintenance Responsibilities	i. The ROMP shall include details as to the proposed future ownerships and maintenance responsibilities, and long term funding (including funding plans for maintenance) for the proposed ROMP flood control and storm drain facilities, retarding basins, and water quality detention basins.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15. In addition, future ownership, operation and maintenance including funding Requirements of item no. 23 will be clarified by RMV in the future.	PC-Wide

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24	14-23 and 25-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, OCFCD	ROMP Opportunities	j. The ROMP shall identify proposed Orange County Flood Control District (OCFCD) and/or County ownership facilities identified in sufficient detail with proposed configuration, sizes, alignment, rights-of-way widths, etc. for review and approval during the ROMP review process as to whether the ownership of proposed flood control/drainage facilities are to become OCFCD or County facilities.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15. In addition, sufficient ownership details of proposed flood control/drainage facilities per Requirements of item no. 24 will be clarified by RMV in the future.	PC-Wide
25	14-24 and 26-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, diversions between watersheds	ROMP Diversions Between Watersheds	k. The ROMP shall provide that any proposed diversions between watersheds shall be subject to the approval of the Manager, Flood Control Division.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15	PC-Wide
26	14-25 and 27-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) RO ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative	Water Resources	Ranch-wide ROMP, land use, peak discharges, runoff volumes	ROMP Revisions Per Future Land Use Changes	l. The ROMP shall provide that any future revisions to the ROMP in order to accommodate land use changes or other issues that have the potential of modifying or invalidating previous conclusions regarding peak discharges and runoff volumes shall require the approval of the Manager, Flood Control Division.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15	PC-Wide

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				Map approvals and prior to rough grade plan approvals.								
27	14-26 and 28-29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, channel stability, monitoring	ROMP Monitoring and Mitigation Program	m. Consistent with the ROMP, and in order to mitigate project impacts on channel stability and erosion, the applicant shall implement a monitoring and accompanying mitigation program that provides, among other things, assurance for provisions of dedication of any lands needed within the Ranch to accomplish necessary mitigations, if any. Said monitoring and mitigation program shall be subject to the approval of the Manager, Flood Control Division. Monitoring for project impacts shall be conducted for San Juan Creek and its major tributaries within and downstream of the Ranch to the La Novia Bridge; if the San Mateo Creek watershed is affected, the monitoring shall cover those portions of San Mateo Creek and its major tributaries that are within the County and that are likely to be impacted by the project. The monitoring activities shall continue during the project development phases ... (cont.)	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	PA-1 is approved with applicable requirements of the March 27, 2007 approved Streambank Monitoring Program [Hyperlink #6], and the baseline Annual Stream Monitoring Data Inventory Report. [Hyperlink #7]. PA-2 through 5 will modify the Mar. 27, 2007 Monitoring Program to extend creek reach monitoring stations further upstream to eventually cover the entire Ranch Development from La Novia to the upstream Ranch boundary. Updates to the Stream Monitoring Program and Annual Monitoring Data Inventory Report need to be provided by RMV for review, comment and approval as new PAs are added to the program/report.	PC-Wide
28	14-27 and 29 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement)	Water Resources	Ranch-wide ROMP, storm events, funding, remediation	ROMP Monitoring and Mitigation Program (continued)	m. (cont.): and shall extend for a period of 10 years following the completion of the final grading of the last planning area of the Ranch Plan that includes at least two (2) storm events that generate discharges of at least 20 percent of computed 100-year high confidence	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15 and 19-20. In addition, documentation and analyses for review, comment and approval need to be	PC-Wide

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				ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.				discharges in a manner meeting the approval of the Manager, Flood Control Division. The accompanying mitigation program shall be based on a detailed study of the watershed and data collected from the monitoring program funded by the applicant. Said mitigation program shall be in addition to the mitigation measures (e.g., construction of flood control structures, setting up funds through bonds) formulated in the ROMP for items that are found to be not adequately mitigating development-related impacts. The applicant and the County/OCFCD will meet in good faith to formulate a plan for remediating and/or improving any under-performing mitigation measures, all at no cost to the County/OCFCD.			provided in the future by RMV in order to fulfill the mitigation, remediation and funding Requirements of item no. 28.	
29	14-28 (MM 4.5-1), 30 (MM 4.5-2) and 247-248 (PC Text Cond. 4.a.)	EIR 589	MM 4.5-1 (cont.)	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Water Resources	Ranch-wide ROMP, Locally Preferred Plan	ROMP Locally Preferred Plan (LPP)	n. If a Locally Preferred Plan (LPP) is developed that contemplates or otherwise assumes Ranch Plan development within the San Juan Creek watershed, the County and the applicant may pursue an alternative mitigation measure strategy based on the LPP that includes (i) mitigation measures within the Ranch and (ii) participation in offsite mitigation measures to the extent that said alternative mitigation measures are determined to be consistent with (a) the objectives of the County's Drainage Area Master Plan for water quality purposes, the (b) the ROMP and (c) the MPD.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan with verification of subsequent implementing actions	See guidance above related to Item Nos. 14-15. Requirements of item no. 29 hinge on development of a Locally Preferred Plan (LPP) and will be addressed in the future.	PC-Wide
30	14-29 (MM 4.5-1), 65 (MM 4.5-7) and 249 (PC Text Cond. 4.b.)	EIR 589	MM 4.5-2	Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1 (Refer to Exhibit	Water Resources	Ranch-wide MPD	ROMP Master Plan of Drainage	Prior to the approval of the first Master Area Plan (or other planning level approval) covering any portion of the Ranch, the applicant shall prepare a Master Plan of Drainage ("MPD") that (i) is in	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~	Submittal of satisfactory Master Plan of Drainage	The Master Plan of Drainage (MPD) for the San Juan Creek watershed (PA1 - PA5) has not yet been submitted,	PC-Wide

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				F in Development Agreement) ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.				amended, including the approval of the Manager, Flood Control Division and the Manager, Watershed and Coastal Resources Division and (ii) shows all flood control, storm drain, and water quality features within the affected watershed(s).	~~Director~~ OC Planning		but drainage studies and hydrology analyses which are to be the basis for a subset of the MPD have been cleared per the PA1 ROMP Clearance Letter from Harry Persaud dated October 25, 2006 [Hyperlink #2]. A MPD showing all flood control, storm drain and water quality features for consistency with the Aug. 6, 2010 approved San Juan Creek Watershed Study, for drainage studies and hydrology analyses for the PAs will be provided by RMV in the future in fulfillment of the Requirements of item no. 30.	
31		EIR 589	MM 4.5-3	Prior to the approval of a Master Area Plan for each Planning Area	Water Resources:	WQMP, Master Area Plan, Level 2	Master Area Plan-Level 2 WQMP	Prior to the approval of a Master Area Plan for each Planning Area, the applicant shall prepare a Master Area Plan WQMP that (i) is consistent with the terms and content of the Draft WQMP (see PDF 4.5-3) and (ii) provides more particularized information and detail concerning how the provisions of the Draft WQMP will be implemented within the area covered by the individual Master Area Plan. At a minimum, each Master Area Plan WQMP will provide supplemental and refined information concerning (i) how site-design, source-control and treatment control BMPs will be implemented at	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ Director, OC Planning	Approval of Level 2 WQMP	WQMP for San Juan Creek Watershed (PA-2 through 5) and San Mateo Watershed are pending; see definition of Level 2 WQMP in September , 2010 WQMP Process memo from Director OCPW [Hyperlink #3]. In addition, Planning Area 1 details were reviewed and authorized by RWQCB, San Diego region letter dated October 16,	Each PA

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								the master area plan level for the area in question, (ii) potential facility sizing and location within the subject Master Area Plan area, and (iii) monitoring, operation and maintenance of stormwater BMPs within the relevant Master Area Plan area.			2006 [Hyperlink #4] (pg. 6, #12 and pg. 13, #3 and #4) and approved per the PA-1 ROMP clearance letter dated Oct. 25, 2006 [Hyperlink #2]	
32	33-35 (MM 4.5-4)	EIR 589	MM 4.5-4	Prior to approval of Subarea Plan for any portion of the project area and after approval of Master Area Plan	Water Resources	WQMP, Sub-Area Plan, Level 3	Sub-Area Plan-Level 3 WQMP Criteria	Prior to the approval of a Sub-Area Plan for any portion of the project area that is the subject of an approved Master Area Plan, the applicant shall prepare a Sub-Area Plan WQMP that (i) is consistent with the terms and content of the Draft WQMP (see PDF 4.5-3), (ii) is consistent with the terms and content of the relevant Master Area Plan WQMP (see MM 4.5-3) and (iii) provides more particularized information and detail concerning how the provisions of the Draft WQMP and the relevant Master Area Plan WQMP will be implemented within the area covered by the individual Sub-Area Plan. At a minimum, each Sub-Area Plan WQMP will provide supplemental and refined information concerning:	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	Appropriate Level 2 Chapter of ROMP satisfies Master Planning level	See guidance above related to Item No. 31.	Each PA
33	32 and 34-35 (MM 4.5-4)	EIR 589	MM 4.5-4 (cont.)	See above	Water Resources	WQMP, site-design, source control, BMPs	Level 3 WQMP Implementation	(i) How site-design, source-control and treatment control BMPs will be implemented at the Sub-Area Plan level for the area in question,	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	See above	See guidance above related to Item No. 31.	Each PA
34	32-33 and 35 (MM 4.5-4)	EIR 589	MM 4.5-4 (cont.)	See above	Water Resources	WQMP, design features	Level 3 WQMP Design Details	(ii) The size, location and design features of the individual water resource facilities to be developed within the subject Sub-Area Plan area, and	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	See above	See guidance above related to Item No. 31.	Each PA

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35	32-34 (MM 4.5-4)	EIR 589	MM 4.5-4 (cont.)	See above	Water Resources	WQMP, monitoring, operation, maintenance, BMPs	Level 3 WQMP Operation and Maintenance	(i) Monitoring, operation, maintenance of the ~~storm drain~~ BMPs within the relevant Sub-Area Plan area.	Director of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning**	See above	See guidance above related to Item No. 31.	Each PA
36	14 (MM 4.5-1) 37-49 (MM 4.5-5)	EIR 589	MM 4.5-5	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, peak discharges	Verification of Construction/ Implementation of Flood Control Detention Facilities	As appropriate during Ranch Plan development process, the applicant will be required to construct and implement flood control detention facilities to provide hydrologic mitigation for increases in peak discharges. Detention facilities will be located at the lower end of each of the major developed planning areas as necessary within the Ranch Plan project. While the specific design and characteristics of each basin will be refined during the project design process, planning level information is provided in this section to characterize the facilities and their functions. Initial basin locations are shown on **Exhibit 4.5-13** for the Ranch Plan. The specific number, size and locations of the basins will be determined during the ROMP process. Further refinement may be achieved during the design process.	Manager of OC Flood Control Programs in conjunction with Vector Control	Verification of construction/ implementation of flood control detention facilities; Approved monitoring program to track the performance of detention facilities	Validation and refinement for hydrologic mitigation for any development related increases in peak discharges will occur during the Planning Area ROMP process with determination for the number, size and location of basins occurring during the rough grading plan review. The flow analysis may include extended areas of the watershed(s) beyond the Planning Area boundary for analysis and mitigation as necessary. Specific and final design of flood control detention facilities implemented on Final Improvement Plans prior to their approval.	PA-2, 3, 4, 5, and 8 and immediate water-sheds

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37	36 and 38-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, hydrograph	Flood Control Developed Facilities Design and Analysis	a. Hydrologic analysis to provide an initial estimate of the range of storage volumes that may be required in each of the major planning areas. Refined design and analysis of the basins needs to ensure that these facilities mitigate regional flood control facility [illegible] and address uncertainties such as timing of hydrograph peaks and the interaction with other elements within the watershed drainage network.	Manager of OC Flood Control Programs in conjunction with Vector Control	See above	See guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds
38	36-37 and 39-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, Guobernadora	Detention Basins Designed as Off-Line	b. The detention basins will be designed as "off-line" from most of the major stream channels. It is initially planned that the Gobernadora detention basin would be located within the channel and designed as a "flow through" basin. Generally speaking, flow from the development areas will be routed through the basins prior to discharge to the mainstem stream channels. By contrast, flows from undeveloped areas will not be routed through the basins, but will generally follow existing drainages directly to the main channels.	Manager of OC Flood Control Programs in conjunction with Vector Control	See above	See guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds
39	36-38 and 40-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, forebay, weir, access road	Basin Forebay Design	c. The basins will be designed to include an initial forebay area for trapping of sediment, floating debris etc). The sediment forebay will be designed for easy maintenance, with an elongated shape maximize the opportunity for sediment (and pollutants adsorbed to the sediment particles) to settle out, and to allow easy sediment removal by an excavator on the access road. Maintenance standards will be established for maximum depth of accumulated sediment in the forebay basins prior to removal. An overflow weir will connect the forebay to the main detention	Manager of OC Flood Control Programs in conjunction with Vector Control	See above	On design plans (see Item 45) Also, see guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds

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								facility. The larger facility will include the entrance zone, the main storage area and the outlet structure. The basin will have sloped, vegetated sides, a perimeter access road, and a ramp access to the basin floor.				
40	36-39 and 41-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, fencing	Detention Facility Fencing	d. The entire detention facility will be fenced to preclude public access. The floor of the basin will likely be colonized by emergent vegetation. This can provide additional water quality improvement of urban runoff, and evaporation potential during the dry season. In addition, this vegetation will provide incidental avian and wildlife habitat. However, the primary intent of the structures is to provide sediment trapping in the forebay, and flood detention in the main basin. As such, maintenance protocols and regulatory permits should be established prior to the design process to facilitate the required periodic sediment removal and facility maintenance.	Manager of OC Flood Control Programs in conjunction with Vector Control	See above	On design plans (see Item 45) Also, see guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds
41	36-40 and 42-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, outlet structure, spillway	Detention Facility Outlet Structure and Spillway	e. The outlet structure will be configured to control a wide range of flows, providing flow management from the 2- to 100-year flow event. It will also include an overflow spillway, designed to safely convey floods in excess of the outlet structure capacity directly to the stream. A subdrain will be provided to insure complete drainage within several days following a flow event.	Manager of OC Flood Control Programs in conjunction with Vector Control	See above	On design plans (see Item 45) Also, see guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds

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42	36-41 and 43-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities	Flood Control Detention Facilities Implementation Criteria	f. Maintaining over the long term effectiveness of the detention facilities the establishment of an on-going maintenance and monitoring program. The applicant will establish both a management entity and a funding source to insure the implementation of program (to accomplish the following goals:	Manager of OC Flood Control Programs in conjunction with Vector Control	See above	On design plans (see Item 45) Also, see guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds
43	36-42 and 44-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, monitoring	Flood Control Detention Facilities Monitoring	1) The monitoring program will track the performance of the detention facilities as well as the stability of the various stream channels within and downstream of the Ranch Plan project (to La Novia Bridge for San Juan Creek and to County border for San Mateo Creek). The monitoring will serve to identify the regular maintenance needs of the facilities as well as track any emerging problems with erosion or sedimentation in the stream channels. The monitoring shall be in a manner receiving the approval of the County/OCFCD.	Manager of OC Flood Control Programs in conjunction with Vector Control	See above	PA-2 through 5 will modify the Mar. 27, 2007 Monitoring Program to extend creek reach monitoring stations further upstream to eventually cover the entire Ranch Development from La Novia to the upstream Ranch boundary. Updates to the Stream Monitoring Program and Annual Monitoring Data Inventory Report need to be provided by RMV for review, comment and approval as new PAs are added to the program/report.	PA-2, 3, 4, 5, and 8 and immediate water-sheds
44	36-43 and 45-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, maintenance	Flood Control Detention Facilities Maintenance	2) Detention basin maintenance will include:	Manager of OC Flood Control Programs in conjunction with Vector Control		Complete requirements related to Items 45-49 below:	PA-2, 3, 4, 5, and 8 and immediate water-sheds
45	36-44 and 46-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, maintenance	Forebay Sediment Accumulation and Removal	• Identifying the rate of sediment buildup in the forebay or in the main facility and provision for sediment removal when the accumulated sediment reaches a specified depth. The initial sizing criteria for basin volume will include	Manager of OC Flood Control Programs in conjunction with Vector Control	Identify sediment buildup	Requirements of item no. 45 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36. Specific	PA-2, 3, 4, 5, and 8 and immediate water-sheds

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								provisions to minimize loss of storage during the period of sediment accumulation.			and final design of flood control detention facilities implemented on Final Improvement Plans prior to their approval.	
46	36-45 and 47-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, vegetation management	Flood Control Detention Facilities Emergent Vegetation Management	A vegetation management plan will be specified for all of the structural elements of the flood detention system. The applicant will work with the County to identify elements of the detention basin that can accommodate some vegetation (for example if water quality ponds are included in the facility, vegetation criteria will be developed for these). Based on County recommendations, vegetation will be precluded from the active flood detention basins to facilitate sediment removal activities.	Manager of OC Flood Control Programs in conjunction with Vector Control	Prepare vegetation management plan	Requirements of item no. 46 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds
47	36-46 and 48-49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities	Flood Control Detention Facilities (Item Nos. 36-49)	• Water Resources - Flood Control Detention Facilities Vector/Nuisance Management: The design and maintenance of the basins will include prevention of vector problems such as mosquitoes, rodents, algal blooms, etc.	Manager of OC Flood Control Programs in conjunction with Vector Control	Include vector control information	Requirements of item no. 47 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds
48	36-47 and 49 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, structural components	Detention Facilities Structural Components	• The basin inlet and outlet structures will require periodic maintenance to remove accumulated debris and replacement of damaged or aging elements. If the basins include a water recovery program (i.e., use of detained or infiltrated water for irrigation), the pumps and associated facilities (screens, pipes, valves) will require ongoing monitoring/maintenance.	Manager of OC Flood Control Programs in conjunction with Vector Control	Plan for periodic maintenance	Requirements of item no. 48 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds

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49	36-48 (MM 4.5-5)	EIR 589	MM 4.5-5 (cont.)	Prior to the construction of flood control detention facilities	Water Resources	Flood control, detention facilities, appearance, landscaping	Detention Basins Appearance/Landscaping	The planning process shall ensure large elements situated at visible locations within the development areas. As such their design and maintenance are important from an aesthetic perspective. The perimeter fencing, access roads and landscaping, on the basin sites shall be will require ongoing irrigation and upkeep to insure that the basins represent visually appealing facilities. The basins will be designed to meet the County of Orange design requirements.	Director of OC Flood Control Programs in conjunction with Vector Control	Meet County of Orange design requirements.	Requirements of item no. 49 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	PA-2, 3, 4, 5, and 8 and immediate water-sheds
50	51-64 (MM 4.5-6)	EIR 589	MM 4.5-6	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, flow duration matching, water balance	Combined Flow and Water Quality Control System	All developments will be designed in order to achieve flow duration matching, address the water balance, and provide for water quality treatment through a combined flow and water quality control system (termed combined control system).	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	Combined Flow and Water Quality System as set forth in the Master WQMP and Subarea Plan WQMPs	Requirements of item no. 50 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed
51	51 and 57-64 (MM 4.5-6) Item Nos. 52-55 were integrated into 51 (the five bullet points under "a" were originally separate items)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, flow duration control, infiltration basin, recycled water, non-domestic supply	Combined Control System Components	a. The proposed combined control system will include one or more of the following components (see Exhibits 4.5-14, 15 and 16), each of which provides an important function to the system: • Flow Duration Control and Water Quality Treatment (FD/WQ) Basin • Infiltration Basin • Bioinfiltration Swale • Storage Facility for Recycling Water for Non-Domestic Supply • Diversion Conduit to Export Excess Flows out of the Sub-basin	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	See above	Requirements of item no. 51 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed

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57	50-51 and 58-64 (MM 4.5-6)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, water quality treatment control	Combined control system Components (continued	a flow duration control and water quality treatment basin provides the initial flow and water quality treatment control functions to the system. The remaining components address the excess flows, alone or in combination with each other, generated during wet weather. Additional water quality treatment control is also provided in the infiltration basin and bioinfiltration swale. The following sub-sections describe each combined control system component in more detail.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ Director, OC Planning,	See above	Requirements of item no. 57 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed
58	50-57 and 59-64 (MM 4.5-6)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, low duration control, water quality treatment, detention capacity	Flow Duration Control and Water Quality Treatment (FD/WQ) Basin	1) The flow duration control and water quality treatment (FD/WQ) basin will provide both flow control and water quality treatment in the same basin. Detention basins are the most common means of meeting flow control requirements. The concept of detention is to collect runoff from a developed area and release it at a slower rate than it enters the collection system. The reduced release rate requires temporary storage of the excess amounts in a basin with release occurring over a few hours or days. The volume of storage needed is dependent on 1) the size of the drainage area; 2) the extent of disturbance of the natural vegetation, topography and soils, and creation of impervious surfaces that drain to the stormwater collection system; 3) the desired detention capacity/time for water quality treatment purposes; and 4) how rapidly the water is allowed to leave the FD/WQ basin, i.e., the target release rates.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ Director, OC Planning,	See above	Requirements of item no. 57 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed

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59	50-58 and 60-64 (MM 4.5-6)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, detention, treatment, vegetation, dry weather flows	Flow Duration Control and Water Quality Treatment (FD/WQ) Basin (continued)	1) (cont.) The FD/WQ basin shall incorporate extended detention outlet control to provide water quality treatment for storm flows. The FD/WQ basin shall also incorporate wetland vegetation in a low flow channel along the bottom of the basin for the treatment of dry weather flows and small storm events.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ Director, OC Planning,	See above	Requirements of item no. 59 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed
60	50-59 and 61-64 (MM 4.5-6)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system,	Flow Duration Control and Water Quality Treatment (FD/WQ) Basin (continued)	1) (cont.) To the extent feasible depending on the topography and grade, the FD/WQ basin will be located in areas where there is a larger depth to groundwater and more infiltrative soils. The FD/WQ basin shall be designed to have two active volumes, a low flow volume and a high flow volume. The low flow volume is designed to capture small to moderate size storms, the initial portions of larger storms, and dry weather flows. The high flow volume is designed to store and release higher flows to maintain, to the extent possible, the pre-development runoff conditions.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ Director, OC Planning,	See above	Requirements of item no. 60 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed
61	50-60 and 62-64 (MM 4.5-6)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, infiltration, pretreatment	Infiltration Basin	2) The second element in the combined control system shall consist of a separate downstream, shallow basin designed to infiltrate stormwater where soils have a high infiltration capacity. The infiltration basin is sized to infiltrate all the flows released from the lower volume in the FD/WQ basin; nonetheless, an overflow system would convey excess flows that may occur during very wet years to the bioinfiltration swale discussed below. Features of the proposed combined control system that shall guard against groundwater contamination include: (1) pretreatment of all runoff in a FD/WQ basin before it enters	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ Director, OC Planning,	See above	Requirements of item no. 61 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed

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								the infiltration basin, and (2) locating infiltration basins where there is at least 10 feet of separation to the groundwater.				
62	50-61 and 63-64 (MM 4.5-6)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, bioinfiltration swale, pre-development runoff	Bioinfiltration Swale	3) The third element of the combined control system shall be a bio-infiltration swale that leads from the FD/WQ basin to the stream channel. A bio-infiltration swale is a relatively flat, shallow vegetated conveyance channel that removes pollutants through infiltration, soil adsorption, and uptake by the vegetation. In areas characterized by terrains with good infiltration capabilities, flows released from the FD/WQ basin and carried in the bio-infiltration swale will mimic pre-development conditions, in which low flows infiltrate in the soils and only high flows reach the main stem of the stream channel. In catchments where development is located on less pervious soils and therefore pre-development runoff is higher, the swale may be lined to better mimic pre-development hydrology or flows may be piped to the stream.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	See above	Requirements of item no. 62 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed
63	50-62 and 64 (MM 4.5-6)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, surface storage, recycling	Storage Facility for Recycling Water for Non-Domestic Supply	4) The fourth possible element of the combined control system shall be storage of surface water flows for recycling where there is opportunity for reuse of water for irrigation, such as a golf course, residential common area, or local park. All elements of the combined flow and water quality control system shall be reviewed with the SMWD for determination of feasibility of reuse and connection to non-domestic irrigation facilities. Diversion of outflows from the FD/WQ basin to non-domestic water supply reservoirs will be	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	See above	Requirements of item no. 63 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed

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								conducted, feasible and cost effective.				
64	50-63 (MM 4.5-6)	EIR 589	MM 4.5-6 (cont.)	In conjunction with Master and Subarea Plans (WQMP Level 2 & 3)	Water Resources	Combined control system, export flows, diversion, San Juan Creek, Lower Cristianitos Creek, Cañada Chiquita	Diversion Conduit to Export Flows out of the Sub-basin	5) The fifth possible element of the combined control system shall be the provision to export flows out of the sub-basin. This element provides an additional option that may be employed to better preserve the pre-development water balance within the sub-basin. Such diversions may be desirable where excess runoff could result in increased stormwater flows or increased base flows in sensitive streams. However, all diversions of drainage area are subject to approval by the County of Orange. The diversions would be for excess runoff only and would only be feasible for development bubbles that adjoin other sub-basins having less sensitive stream channels, or are close to San Juan Creek or Lower Cristianitos Creek, which have characteristics that allow them to handle additional flows without causing damage to the stream channel. In some locations, such as Cañada Chiquita, it may also be feasible to divert flows to the wastewater treatment plant for reclamation.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	See above	Requirements of item no. 64 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each PA and immediate water-shed
65	66-76 (MM 4.5-7)	EIR 589	MM 4.5-7	Prior to recordation of a subdivision map	Water Resources	Stream stabilization, ROMP, HOA responsibility	Stream Stabilization Program Components	Prior to the recordation of a subdivision map, unless otherwise specified by the provisions of the applicable master area or planning area-specific ROMPs (as appropriate), the development applicant shall prepare a stream stabilization program, including funding, that will be implemented by the HOA or other responsible entity to mitigate anticipated limited local effects of erosion associated with drainage system outlets from the development ~~or~~ downstream of detention basins. These	**Director, OC Planning** ~~Manager of Watershed & Coastal Resources~~	Submit stream stabilization program, including funding, that will be implemented by the master maintenance association or other responsible entity	Requirements of item no. 65 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each Applicable PA and imme-diate water-shed

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								erosion from sediment can be addressed with non-structural biotechnical and geomorphic approaches aggressively at the first phase and if not effective then limited structural measures would be implemented. These approaches vary by terrain and the character of the channels:				
66	65 and 67-76 (MM 4.5-7)	EIR 589	MM 4.5-7 (cont.)	See above	Water Resources	Stream stabilization, sandy and silty-sandy terrain, infiltration basins and ponds	Stream Stabilization Program - Sandy and Silty-Sandy Terrain	(1) Sandy and Silty-sandy terrain: Water quality and infiltration basins and ponds ~~will be~~ are designed to be constructed (or provide evidence of financial security, such as bonding) along unnamed tributary channels and channel-less valleys. Appropriate energy dissipation ~~will be~~ are designed to be installed downstream of each structure or control point. 'Hungry water' or potential downcutting will be controlled by a progressive sequence of:	**Director, OC Planning** ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 66 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each Applicable PA and immediate watershed
67	65-66 and 70-76 (MM 4.5-7) Item Nos. 68 and 69 were integrated into 67 (originally a, b and c were separate items)	EIR 589	MM 4.5-7 (cont.)	See above	Water Resources	Stream stabilization, hydrophytic vegetation, turf-reinforced mats (TRM), erosion control fabric	Stream Stabilization Program - Progressive Sequence of "Downcutting" Control	a. Establishment of hydrophytic vegetation, either turf-forming (such as salt grass or sedges) or with interpenetrating roots (such as willows); then b. Placement of turf-reinforced mats (TRM) or other flexible and biodegradable membrane to abet vegetative growth to stabilizes the small drainages downstream of controls; then, c. Conventional erosion control fabrics and structures using techniques developed over the years to control gully- or small-channel incision.	**Director, OC Planning** ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 67 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each Applicable PA and immediate watershed

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70	65-67 and 71-76 (MM 4.5-7)	EIR 589	MM 4.5-7 (cont.)	See above	Water Resources	Stream stabilization, sandy and silty-sandy terrain, incision	Stream Stabilization Program - Sandy and Silty-Sandy Terrain (cont.)	1. Assuming a high flow named stream corridors, the potential for incision is larger, and is most reasonably addressed by a progressive sequence to include:	Director, OC Planning ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 70 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each Applicable PA and immediate watershed
71	65-70 and 74-76 (MM 4.5-7) Item Nos. 72 and 73 were integrated into 71 (originally a, b and c were separate items)	EIR 589	MM 4.5-7 (cont.)	See above	Water Resources	Stream stabilization, Gobernadora Creek, sediment yields, avulsion, riparian vegetation, thalweg	Stream Stabilization Program - Incision Control	a. Attempting to reduce runoff volumes and peaks from the watershed, by a combination of additional retarding of flow and use of (reconnecting, where needed) floodplains for flows of moderate to high recurrence. b. Reducing sediment yields from disturbed watershed upstream, such that avulsion (sudden channel changes, such as recently seen in Gobernadora Creek) can be minimized. c. Where the bed remains within the root zone of riparian vegetation, widening the riparian corridor, and managing its vegetation to promote dense interpenetrating roots, such as naturally occurs along many reaches of these streams, perhaps in combination with reconfiguring the channel pattern to increase sinuosity to a stable thalweg length-to-channel slope value.	Director, OC Planning ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 71 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each Applicable PA and immediate watershed
74	65-71 and 76 (MM 4.5-7) Item No. 75 was were integrated into 74 (originally a, b and c were separate items)	EIR 589	MM 4.5-7 (cont.)	See above	Water Resources	Stream stabilization, clayey terrain, biotechnical stabilization	Stream Stabilization Program - Clayey Terrain	(2) Clayey Terrain: Differences between existing and future conditions will be the least in this terrain. Clayey terrains are also most resistant to incision, in most cases. Hence, biotechnical stabilization is most favored in this setting, especially for the smaller unnamed channels downstream from the small retarding and infiltration basins proposed at many locations. A progressive sequence of:	Director, OC Planning ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 74 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each Applicable PA and immediate watershed

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76	65-74 (MM 4.5-7) Item Nos. 77-79 were integrated into 76 (originally a, b, c and d were separate items)	EIR 589	MM 4.5-7 (cont.)	See above	Water Resources	Stream stabilization, hydrophytic or woody riparian vegetation, turf-reinforcing mats, engineered slopes	Stream Stabilization Program - Biotechnical Stabilization	a. Establishing hydrophytic or woody riparian vegetation, especially along the bases and crests of banks; b. Installing turf-reinforcing mats and other shear-resistant soft structures; c. Slight widening of channels where feasible without significantly reducing the tractive strength imparted by riparian vegetation, if significant; and d. Engineering slopes using fabrics, or placing thoroughly-keyed structural controls, usually in combination with a., b., and c., above.	**Director, OC Planning** ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 76 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Each Applicable PA and imme-diate water-shed
80	81-97 (MM 4.5-8)	EIR 589	MM 4.5-8	Prior to issuance of a grading permit	Water Resources	Stream monitoring, funding, reporting	Stream Monitoring Program Submittal Requirements	Consistent with the provisions of the applicable master area or planning area-specific ROMPs (as appropriate), a stream monitoring program shall be developed, with assured funding source, by the applicant, and at no cost to County/OCFCD, prior to the construction within the watershed which will include reporting requirements in order to observe changes in the natural alluvial stream system. The minimum program will include and address the following items:	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	Submit stream stabilization program, including funding, that will be implemented by the master maintenance association or other responsible entity	Requirements of item no. 80 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide
81	80 and 82-97 (MM 4.5-8)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, geomorphology, flood conveyance	Stream Monitoring Program - Stream Walks	1) A geomorphologist or engineer familiar with both (a) flood conveyance estimation and (b) the bed conditions required to meet habitat needs and conditions for species of concern will walk critical reaches of named channels within the project each year in late April. The stream-walker will note bed conditions, measure high-water marks, note new sources of sediment or bank distress along the channels, estimate Manning's 'n' (roughness) at key locations, and assess whether bed and bank vegetation is suitable to meet conveyance and habitat objectives.	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 81 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide

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82	80-81 and 83-97 (MM 4.5-8)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, rainfall intensity, Chiquita watershed	Stream Monitoring Program - Stream Walks (continued)	1) Stream walks will occur during years 1, 2, 3, 4, 5, and 25 following substantial grading in a named-stream basin, and during any year within the first 10 seasons when 6-hour rainfall intensities exceed the 5-year recurrence at a nearby rain gauge. The stream-walker will also similarly canvass the lower 2 miles of Bell Canyon and the upper Chiquita watershed north of Oso Parkway, two stream segments with largely-intact and formally-preserved watersheds, which can serve as control. Photographs showing key sites or problems will be taken. The individual conducting the walks shall be sufficiently senior and knowledgeable as to be registered as a geologist or engineer with the state. This individual will prepare an annual report by June 20 of the relevant year(s) specifying maintenance or repair measures needed to maintain suitable sediment transport and bed conditions	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 82 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide
83	80-82 and 92-97 (MM 4.5-8) Item Nos. 84-91 were integrated into 83 (originally a-h were separate items)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, Lower Narrow Creek, Chiquita Creek, Gobernadora Creek, Bell Creek, Upper Cristianitos Canyon, Lower Gabino Creek, La Paz Creek	Stream Monitoring Program - Surveys	2) Monumented cross sections will be established and surveyed on: a. Lower Narrow Creek b. Chiquita Creek (4 locations) c. Gobernadora Creek (4 locations) d. Bell Creek (2 locations) e. Upper Cristianitos Canyon (3 locations) f. Lower Gabino Creek (3 locations) g. Gabino Creek within 0.5 miles of La Paz Creek h. La Paz Creek within 0.6 miles of Gabino Creek	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 83 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide

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92	80-83 and 92-97 (MM 4.5-8)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, San Juan Creek, geomorphic conventions	Stream Monitoring Program - Surveys (cont.)	2) (cont.) The initial surveys monitoring sections will also be provided on San Juan Creek and all monitoring locations will first be approved by the County of Orange before implementation. The cross sections will be spaced approximately 0.6 to 1.2 miles apart and approved by the County. They will be surveyed to the nearest 0.05 feet vertical, and include notations of bed material encountered and qualitative descriptions of vegetation, and other observations conforming to geomorphic conventions, such as the International Hydrologic Vigil Network standards.	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 92 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide
93	80-92 and 94-97 (MM 4.5-8)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, stream walk, rainfall intensity	Stream Monitoring Program - Surveys (cont.)	2) (cont.) The initial surveys will be conducted prior to grading, with resurveys during years 1, 3, 5 and 10 following initial grading or at frequencies determined by the County of Orange. Re-surveys will also be conducted during years when 6-hour rainfall intensities exceed the 5-year recurrence at a nearby pre-selected recording rainfall gauge or selected occurrences by the County of Orange. Results will be analyzed by the stream-walker, and included in the related report, recommending maintenance and restorative measures. The report will be submitted by May 20 of each year, to allow design and implementation (where needed) prior to the next winter.	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 93 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide

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94	80-93 and 95-97 (MM 4.5-8)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, San Juan Creek	Stream Monitoring Program, Periodic Aerial Photography	3) (cont.) Aerial photographs of the entire project area will be taken annually in June following project approval, and during each subsequent May or June of years ending in a '5' or '0', until the project has been completed as defined by the County of Orange. Resolution of the photographs will be sufficient to prepare 200-foot scale maps with 2-foot (or 0.5-meter) contours. Contour maps will be prepared for the San Juan Creek channel corridor from the Verdugo Canyon confluence to 0.5 miles downstream of Antonio Parkway showing the topography of the bed and of the banks to elevations 15 feet above the adjoining bed.	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 94 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide
95	80-94 and 96-97 (MM 4.5-8)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, LIDAR, photogrammetric, geomorphology	Stream Monitoring Program, LIDAR: (Light Detection and Ranging)	3) (cont.) LIDAR: (Light Detection and Ranging) or other technologies can be substituted for now-conventional photogrammetric methods. A qualified geomorphologist shall review the aerial photographs of the entire project area, identifying new upland sources of sediment, event-related or land-use disturbance, or evidence of channel change and instability. The geomorphologist will also assess discontinuities in sand transport throughout the project area, and will present an assessment of changes, if any, in the San Juan Creek corridor. Results will be presented in a report to be prepared by July 15 of each year, including recommendations for maintenance, repair, or other actions.	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 95 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide

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96	80-95 and 97 (MM 4.5-8)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, geomorphology	Stream Monitoring Program, Evaluation of changes downstream of ponds and basins	4) Longitudinal profiles and channel or drainage-way cross sections will be established downstream of basins or ponds with capacities exceeding 1 acre foot, or which create a 4-foot elevation change in the energy grade line. Resurveys will occur whenever the stream-walker and/or the geomorphologist reviewing the aerial photos identify actual or incipient incision or erosion. Resurveys will be completed prior to July 1 when and where the need is identified in the May 20 report discussed above.	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 96 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide
97	80-96 (MM 4.5-8)	EIR 589	MM 4.5-8 (cont.)	See above	Water Resources	Stream stabilization, bank conditions	Stream Monitoring Program, Supplemental assessments	5) Adaptive management of channels means changing with the flow of time. Nothing in the program above precludes problem- or condition-related investigations. Additional assessments may be conducted as deemed needed by the applicant to achieve the bed and bank conditions sought.	**Director, OC Planning** (Manager, OC Flood Control) ~~Manager of Watershed & Coastal Resources~~	See above	Requirements of item no. 97 need to be addressed by RMV at the design phase. Also, see guidance above related to Item No. 36.	Ranch Plan Wide
99		EIR 589	MM 4.6-1	As specified in the Transportation Improvement Phasing Plan component of SCRIP (Upon Initiation of Development)	Transportation and Circulation	Transportation improvement program, fair share basis, SCRIP	Transportation Improvement Program	Table 4.6-26 and Table 4.6-27 identify the transportation improvement program proposed as mitigation for the Ranch Plan project for year 2025 and year 2010, respectively. The improvements differ depending on whether the SR-241 southerly extension is assumed. The project applicant shall participate on a fair share basis for improvements associated with cumulative impacts. Funds shall be paid to the County of Orange pursuant to the SCRIP.	~~Director, RDMD~~ **Director, OC Public Works**	Proof of project applicant's payment of funds demonstrating participation on a fair share basis for improvements as a part of the SCRIP Fee Program	See July 30, 2007 "Funding Criteria and Guidelines Relating to SCRIP" prepared by County of Orange (Harris & Associates) [Hyperlink #8]	Each PA

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100	101-102 (MM 4.6.2)	EIR 589	MM 4.6-2	Approval of each Master Area Plan	Transportation and Circulation	SCRIP, EIR Traffic Analysis	Master Area Plan Traffic Analysis Criteria	The planning agency based on the buildout of land uses and the surrounding area and may change based on the effects of the future land development and future changes to regional transportation patterns. The intersection and freeway improvements identified in the SCRIP shall be implemented and/or pro-rata payment shall be made in accordance with the transportation improvement phasing plan of the SCRIP. Prior to the approval of each Master Area Plan, a traffic analysis which supplements The Ranch Plan EIR Traffic Report (Austin-Foust Associates, Inc., May 2004) shall be submitted for review and approval to the County, Director of Planning and Development Services. The traffic study shall include:	Director, OC Development Services **Director, OC Planning** (Area Plans are reviewed by Planning Commission)	Submittal of supplemental traffic study	To be addressed by the Planning Area-wide Traffic Analysis included as part of the environmental documentation addressing each Master Area Plan	Each PA
101	100 and 102 (MM 4.6.2)	EIR 589	MM 4.6-2 (cont.)	See above	Transportation and Circulation	SCRIP, Development Agreement, EIR Traffic Analysis	Evaluation of Compliance with EIR Mitigation Measures	a. An evaluation of how any proposed refinements to the circulation system and/or milestones remain in substantial compliance with appropriate Development Agreement obligations and Program EIR mitigation measures.	See above	See above	See above	Each PA
102	100-101 (MM 4.6.2)	EIR 589	MM 4.6-2 (cont.)	See above	Transportation and Circulation	SCRIP, Development Agreement, EIR Traffic Analysis, peak hour ADT	Evaluation of Peak Hour ADT	b. Average Daily Trips generated by uses proposed within the planning area, as distributed onto the surrounding circulation system (both within the Ranch Plan PC Area, and in the surrounding vicinity) including the peak hour characteristics of those trips.	See above	See above	See above	Each PA

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103		EIR 589	MM 4.6-3	If County, CalTrans, et al, establish a cumulative mitigation program for 1-5 mainline	Transportation and Circulation	I-5 Mainline	~~Assessment of Mainline~~ Cumulative Impacts and Mitigation	No project within Subarea proposed herein to address the cumulative impacts of the project on I-5 mainline. Improvements to the I-5 mainline are a part of regional transportation improvement programs with associated timing and funding sources. If the responsible agencies establish a cumulative mitigation program, the project applicant shall participate on a fair share basis.	~~Director, PDS~~ **Director, OC Planning** (in consideration with Caltrans)	If the responsible agencies establish a cumulative mitigation program, the project applicant shall participate on a fair share basis.	South County Roadway Improvement Program (SCRIP) [Hyperlink #9] is the appropriate program. There is no applicable CalTrans program.	Each PA
104	105-107 (MM 4.7-1)	EIR 589	MM 4.7-1	Prior to the issuance of a grading permit	Air Quality	Diesel fuel engine emissions	Diesel Fuel Reduction Plan Criteria:	In order to reduce diesel fuel engine emissions, the project applicant shall require that all construction bid packages include a separate "Diesel Fuel Reduction Plan." This plan shall identify the actions to be taken to reduce diesel fuel emissions during construction activities (inclusive of grading and excavation activities). Reductions in diesel fuel emissions can be achieved by measures including, but not limited to, the following: a) use of alternative energy sources, such as compressed natural gas or liquefied petroleum gas, in mobile equipment and vehicles; b) use of "retrofit technology," including diesel particulate trips, on existing diesel engines and vehicles; and c) other appropriate measures. Prior to the issuance of a grading permit, the Diesel Fuel Reduction Plan shall be filed with the County of Orange. The Diesel Fuel Reduction Plan shall include the following provisions:	**Director, OC Planning** ~~Director, PDS~~ (AQMP)	Preparation and submittal of a Diesel Fuel Reduction Plan identifying actions to reduce diesel fuel emissions during construction (with specified provisions)		Each PA

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105	104 and 106-107 (MM 4.7-1)	EIR 589	MM 4.7-1 (cont.)	See above	Air Quality	Diesel fuel engine emissions, CARB	Construction Diesel Emissions - CARB Certified Equipment	a. All diesel fueled off-road construction equipment shall be California Air Resources Board (CARB) certified or use post-combustion controls that reduce pollutant emissions to the same level as CARB certified equipment. CARB certified off-road engines are required that are three years old or less and comply with lower emission standards. Post-combustion controls are devices that are installed downstream of the engine on the tailpipe to treat the exhaust. These devices are now widely used on construction equipment and are capable of removing over 90 percent of the PM10, carbon monoxide, and volatile organic compounds from engine exhaust, depending on the specific device, sulfur content of the fuel, and specific engine. The most common and widely used post-combustion control devices are particulate traps (i.e., soot filters), oxidation catalysts, and combinations thereof.	**Director, OC Planning** ~~Director, PDS~~ (AQMP)	See above		Each PA
106	104-105 and 107 (MM 4.7-1)	EIR 589	MM 4.7-1 (cont.)	See above	Air Quality	Diesel fuel engine emissions, pollutant emissions	Construction Diesel Emissions - Current Year Standards	b. All diesel fueled on-road construction vehicles shall meet the emission standards applicable to the most current year to the greatest extent possible. To achieve this standard, new vehicles shall be used or older vehicles shall use post-combustion controls that reduce pollutant emissions to the greatest extent feasible.	**Director, OC Planning** ~~Director, PDS~~ (AQMP)	See above		Each PA
107	104-106 (MM 4.7-1)	EIR 589	MM 4.7-1 (cont.)	See above	Air Quality	Diesel fuel engine emissions, sulfur content of fuel	Construction Diesel Emissions - Low Sulfur Fuel	c. The effectiveness of the latest diesel emission controls is highly dependent on the sulfur content of the fuel. Therefore, diesel fuel used by on-road and off-road construction equipment shall be low sulfur (>15 ppm) or other alternative low polluting diesel fuel formulation such as PuriNOXTM or Amber363.	**Director, OC Planning** ~~Director, PDS~~ (AQMP)	See above		Each PA

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								Provisions of these guidelines required by existing regulations after the year 2007 and it is already being produced and sold as the regulation is phased in.				
108		EIR 589	MM 4.7-2	Prior to approval of ~~Master Area Plan or Subarea Plan~~ Site Development Permit	Air Quality	Alternative fueling facilities	Identify Alternative Fueling Facility Locations	With the submittal of each Master Area Plan, the project applicant shall identify locations where alternative fueling facilities could be sited. [Note: for the purposes of clarification, the timing of this requirement should be interpreted to read as follows: Prior to approval of each applicable Site Development permit, the project applicant shall ...]	~~Director, PDS~~ **Director, OC Planning** (Master Area Plans are reviewed by Planning Commission)	Show alternative fueling facilities on ~~Master Area Plan or Subarea Plan~~ Site Development Permit	Not applicable in Planning Areas where no service stations are proposed (PA1)	Each PA
109		EIR 589	MM 4.7-3	Prior to approval of ~~Master Area Plan or Subarea Plan~~ Site Development Permit	Air Quality	Shade trees, evaporative emissions	Incorporate Shade Trees into Parking Lot Design	With the submittal of each Master Area Plan, the project applicant shall identify how shade trees can be incorporated into parking lot designs (to reduce evaporative emissions from parked vehicles); where shade trees can be sited (to reduce summer cooling needs); and how shade trees would be incorporated into bicycle and pedestrian path design. [Note: for the purposes of clarification, the timing of this requirement should be interpreted to read as follows: Prior to approval of each applicable Site Development permit, the project applicant shall ...]	~~Director, PDS~~ **Director, OC Planning**	Submittal of satisfactory landscape plans (precise, not general landscape plan at SDP level		Each PA
110	111 (MM 4.7-3)	EIR 589	MM 4.7-3 (cont.)	Prior to approval of ~~Master Area Plan or Subarea Plan~~ Site Development Permit	Air Quality	Light-colored roof materials	Use Light-Colored Roof Materials to Reflect Heat (Item Nos. 110-111)	As a part of each Master Area Plan, the applicant shall identify how the use of light-colored roof materials and paint to reflect heat to the extent feasible has been incorporated into the design plans. [Note: for the purposes of clarification, the timing of this requirement should be interpreted to read as follows: Prior to approval of each applicable Site Development permit, the project applicant shall ...]	~~Director, PDS~~ **Director, OC Planning**	Issuance of Building Permit (Evidence of reflection of materials)		Each PA

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111	110 (MM 4.7-3)	EIR 589	MM 4.7-3 (cont.)	Prior to issuance of building permits	Air Quality	Light-colored roof materials	Use Light-colored Roof Materials to Reflect Heat (Item 4.7-3 [cont.])	Prior to issuance of building permits, the applicant shall demonstrate the use of light-colored roof materials and paint to reflect heat to the extent feasible has been incorporated into the design plans.	~~Director, PDS~~ **Director, OC Planning**	Issuance of Building Permit (Evidence of reflection of heat through home design)	Sustainability Issue	Each PA
112		EIR 589	MM 4.7-4	Prior to issuance of grading permit	Air Quality	Construction staging areas, stockpile sites	Location of Construction Staging	All construction staging areas and stockpile sites will be located as far as feasible from residential areas. This provision will apply to currently existing residential areas and to future residential developments that are completed prior to later development stages.	Director, PDS ~~Director, OC~~ **Director, OC Planning**	Preparation and approval of construction staging area plan	These locations will change throughout the grading process. OCFA must be kept abreast of the most current access information	Each PA
113		EIR 589	MM 4.7-4 (cont.)	See above	Air Quality	Vegetative buffers, sensitive receptors	Vegetative Buffer of Sensitive Receptors:	A vegetative buffer zone, including trees and shrubs, will be placed between grading sites and residential areas or other locations where sensitive receptors can be reasonably expected.	~~Director, PDS~~ **Director, OC Planning**	Preparation and approval of a grading plan showing a vegetative buffer zone (if applicable) **Handbook should define sensitive receptors**	Currently no sensitive receptors located within Ranch Plan planned community	Each Grading Permit area (if applicable)
121.1	122-124 (MM 4.9-22)	EIR 589	MM 4.9-22	Prior to completion of the Project Report for F Street ~~issuance of a Grading Permit for construction of Cristianitos Road and~~	Biological Resources	Cristianitos Road, Wildlife Movement	Roadway Design to Facilitate Wildlife Movement	Prior to completion of the Project Report ~~issuance of a grading permit~~ for construction of Cristianitos Road from PA 5 to PA 2 ~~and Cow Camp Road~~ (see 121.2 below), the applicant shall demonstrate to the satisfaction of the County's Director of Planning Services Department or his/her designee that the design for the specified portions of Cristianitos Road ~~and Cow Camp Road~~ (see 121.2 below) includes the following features to facilitate wildlife movement: (see Items 122-124 below)	~~Director, PDS~~ **Director, OC Planning**	Approval of a Street Improvement Plan demonstrating the design for Cristianitos Road ~~and Cow Camp Road~~ (see 121.2 below) includes features to facilitate wildlife movement	The portion of Cristianitos Road not eliminated by the ROSA is depicted on the OCTA approved Circulation Plan [Hyperlink #10]	PA-1.1, 2-8 and 10

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121.2	122-124 (MM 4.9-22)	EIR 589	MM 4.9-22 (cont.)	Prior to completion of a Project Report for Cow Camp Road	Biological Resources	Cow Camp Road, Wildlife Movement	Roadway Design to Facilitate Wildlife Movement	Prior to completion of a Project Report for Cow Camp Road, the Applicant shall demonstrate to the satisfaction of the County's Director, OC Planning or his/her designee that the design for the specified portions of Cow Camp Road includes features to facilitate wildlife movement: (see Items 122-124 below)	Director, OC Planning	Approval of a Street Improvement Plan demonstrating the design for Cow Camp Road includes features to facilitate wildlife movement	121.2 has been added to differentiate compliance between F Street (previously Cristianitos Road) and Cow Camp Road	
122	121 and 123-124 (MM 4.9-22) 133 & 135 (MM 4.9-24 & 25)	EIR 589	MM 4.9-22 (cont.)	In conjunction with siting and design of proposed ground tanks	Biological Resources	SMWD ground tanks, wildlife corridor	Roadway Design to Facilitate Wildlife Movement	Prior to design of the proposed ground tanks, project applicant shall coordinate with SMWD to review potential alternative locations for these tanks that would avoid impacts to Wildlife Corridor linkages G and K, while still meeting SMWD siting criteria for ground tanks.	~~Director, PDS~~ **Director, OC Planning** (Santa Margarita Water District)	Memo from SMWD verifying compliance with this portion of Mitigation Measure .9-22 (or MM 4.9-25, if applicable) per SMWD's authority over siting of water tanks consistent with their Plan of Works, and as the lead agency per CEQA .	Location of tanks shall avoid impacts to Wildlife Corridor linkages G and K (per EIR 589 Exhibit 4.9-8) [Hyperlink #11], or Mitigation Measure 4.9-25 (Item #135) shall apply	PA-2-8 and 10
123	121 and 123-124 (MM 4.9-22) 133 & 135 (MM 4.9-24 & 25)	EIR 589	MM 4.9-22 (cont.)	In conjunction with siting and design of proposed ground tanks	Biological Resources	Tank construction impacts, sensitive habitats, fencing, manufactured slopes, lighting	Roadway Design to Reduce Ground Tank Construction Impacts	In conjunction with construction of these tanks, SMWD shall employ measures to reduce construction impacts, including fencing sensitive habitats and implementing of erosion control. Post construction all temporary disturbance areas shall be restored with native species. All manufactured slopes associated with the ground tanks shall be restored with native species. Lighting shall be restricted to necessary safety lighting and shall be shielded to reduce spill-over into native habitats.	~~Director, PDS~~ **Director, OC Planning** (Santa Margarita Water District)	See above	See above	PA-2-8 and 10
124.1	121-123 (MM 4.9-22)	EIR 589	MM 4.9-22 (cont.)	Prior to completion of the Project Report for F Street ~~issuance of a Grading Permit for construction of Cristianitos Road and~~	Biological Resources	F Street, Cristianitos Road, Wildlife Movement	Lighting on F Street Bridge (Wildlife Movement)	• All lighting on the bridge, if required for public health and safety, shall be shielded to prevent spill-over effects.	~~Director, PDS~~ **Director, OC Planning**	Project Report for F Street	Project Report for F Street shall include sufficient detail to demonstrate that lighting of bridge(s) will prevent spill-over effect, thereby facilitating wildlife movement	PA-2-8 and 10

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124.2	121-123 (MM 4.9-22)	EIR 589	MM 4.9-22 (cont.)	Prior to completion of a Project Report for Cow Camp Road	Biological Resources	Cow Camp Road, Wildlife Movement	Lighting Along Cow Camp Road Bridge (Wildlife Movement)	Lighting shall be limited to that required for public health and safety, and shall be shielded to prevent spill-over effects.	Director, OC Planning	Project Report for Cow Camp Road	Project Report for Cow Camp Road shall include sufficient detail to demonstrate that lighting of bridge(s) will prevent spill-over effect, thereby facilitating wildlife movement	PA-2-8 and 10
133	122-123 (MM 4.9-22) 135 (MM 4.9-25) Also, Item No. 134 has been integrated into 133 (originally two parts)	EIR 589	MM 4.9-24	In conjunction with siting and design of proposed ground tanks	Biological Resources	Wildlife corridor linkages G and K	SMWD Siting Criteria for Ground Tank Locations	Prior to design of the proposed ground tanks, project applicant shall coordinate with SMWD to review potential alternative locations for these tanks that would avoid impacts to Wildlife Corridor linkages G and K, while still meeting SMWD siting criteria for ground tanks.	~~Director, PDS~~ **Director, OC Planning** (Santa Margarita Water District)	Memo from SMWD (as the lead agency per CEQA) verifying that potential alternative locations were considered.	Location of tanks shall meet SMWD siting criteria while avoiding impacts to Wildlife Corridor linkages G and K (per EIR 589 Exhibit 4.9-8) [Hyperlink #11], or Mitigation Measure 4.9-25 (Item #135) shall apply	Each Applicable PA
135	122-123 (MM 4.9-22) 133 (EIR 589, MM 4.9-24)	EIR 589	MM 4.9-25	In conjunction with siting and design of proposed ground tanks	Biological Resources	Tank construction impacts, sensitive habitats, fencing, manufactured slopes, lighting	Reduce Biological Impacts of SMWD Ground Tanks	In conjunction with construction of these tanks, SMWD shall employ measures to reduce construction impacts, including fencing sensitive habitats and implementing of erosion control. Post construction all temporary disturbance areas shall be restored with native species. All manufactured slopes associated with the ground tanks shall be restored with native species. Lighting shall be restricted to necessary safety lighting and shall be shielded to reduce spill-over into native habitats.	~~Director, PDS~~ **Director, OC Planning** (Santa Margarita Water District)	Memo from SMWD (as the lead agency per CEQA) verifying that measures to reduce construction impacts are to be implemented in conjunction with construction of tanks.	This Mitigation Measure is only applicable if alternative sites cannot be identified (per MM 4.9-22 or MM 4.9-24)	Each Applicable PA
136	144-150 (MM 4.9-30)	EIR 589	MM 4.9-26	Prior to issuance of grading permit	Biological Resources	Construction monitoring program, nesting raptors	Monitor Construction Noise Impacts on Raptor Nests	During construction, a construction monitoring program shall be implemented to mitigate for short-term noise impacts to nesting raptors, to the satisfaction of the County of Orange, Manager, Subdivision and Grading. Indirect impacts shall be mitigated by limiting heavy construction (i.e., mass	~~Director, PDS~~ **Director, OC Planning**	Preparation and submittal ~~approval~~ of a Construction Monitoring Program with subsequent implementation	Only Construction Monitoring Program submittal documentation is required: [Hyperlink #12] No copy of USFWS approval is required (often no formal written approval granted by USFWS)	Each Applicable PA

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								grading within 500 feet of occupied raptor nests. Occupied raptors nests shall be marked as "Environmentally Sensitive Areas" on grading/construction plans and shall be protected with fencing consisting of T-bar posts and yellow rope. Signs noting the area as an "Environmentally Sensitive Area" will be attached to the rope at regular intervals.				
137	138-139 (EIR 589, MM 4.9-27)	EIR 589	MM 4.9-27	Prior to the approval of Precise Fuel Modification Plans	Biological Resources	California Exotic Pest Plant Council, OCFA Fuel Modification Plant List	Invasive Plants Prohibited Adjacent to Open Space	All plants identified by the California Exotic Pest Plant Council as an invasive risk in southern California shall be prohibited from development and fuel management zones adjacent to the RMV Open Space. The plant palette for fuel management zones adjacent to the RMV Open Space shall be limited to those species listed on the Orange County Fire Authority Fuel Modification Plant List. Plants native to Rancho Mission Viejo shall be given preference in the plant palette.	~~Director, PDS~~ **Director, OC Planning** (OCFA)	Approved Precise Fuel Modification ~~landscape~~ Plans	Submitted plan shall have a certification that palette will not include invasive species.	Each Applicable PA
138	137 and 139 (EIR 589, MM 4.9-27) 514 (ROSA Exhibit G)	EIR 589	MM 4.9-27 (cont.)	Prior to the approval of Precise Fuel Modification Plans	Biological Resources	California Exotic Pest Plant Council, OCFA Fuel Modification Plant List	Invasive Plants and Fuel Modification	a. Prior to issuance of fuel modification plan approvals, the County of Orange shall verify that: 1) plants identified by the California Exotic Pest Plant Council as an invasive risk in Southern California are not included in plans for fuel management zones adjacent to the RMV Open Space and, 2) the plant palette for fuel management zones adjacent to RMV Open Space is limited to those species listed on the Orange County Fire Authority Fuel Modification Plant List.	~~Director, PDS~~ **Director, OC Planning** (OCFA)	Verification of authorized plant materials	Signature of Landscape Architect on approved Precise Fuel Modification Plan certifying plant palette: (a) complies with current OCFA plant list, and (b) does not include plants listed on the current invasive species list.	Each PA

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139	137-138 (EIR 589, MM 4.9-27)	EIR 589	MM 4.9-27 (cont.)	Prior to the recordation of a map for tract adjacent to the RMV Open Space	Biological Resources	CC&Rs, California Exotic Pest Plant Council	Invasive Species CC&R Prohibition	b. Prior to the recordation of a map for a tract adjacent to the RMV Open Space, the County of Orange shall verify that the CC&Rs contain language prohibiting the planting of plants identified by the California Exotic Pest Plant Council as an invasive plant to be prohibited in private landscaped areas.	~~Director, PDS~~ **Director, OC Planning**	Provide letter stating that CC&Rs contain language prohibiting the planting of plants on most current California Invasive Plant Inventory	To be cleared for the entire Planned Community, upon providing RMV CC&R summary letter [Hyperlink #13] stating that CC&Rs contain language prohibiting the planting of plants on most current California Invasive Plant Inventory (www.cal-ipc.org) in private landscape areas. Only applies to the recordation of tract maps that include lots located immediately adjacent to RMV Open Space	Each PA
140	141 (MM 4.9-28) 515 (ROSA Exhibit G)	EIR 589	MM 4.9-28	Prior to the issuance of building permits on streets ~~for tracts~~ with public street lighting adjacent to RMV Open Space habitat areas	Biological Resources	Open Space habitat, light shields	Streetlight Shielding Adjacent to Open Space	Lighting shall be shielded or directed away from RMV Open Space habitat areas through the use of low-sodium or similar intensity lights, light shields, native shrubs, berms or other shielding methods.	~~Director, PDS~~ **Director, OC Planning**	Preparation of a lighting plan	Preparation of street improvement plans for public streets that detail how street lighting is to be directed away from RMV Open Space areas	Each Applicable PA
141	140 (EIR 589, MM 4.9-28)	EIR 589	MM 4.9-28 (cont.)	See above	Biological Resources	Light shields, street improvement plans	Streetlight Shielding Verification	a. Prior to the issuance of building permits for a tract with public street lighting adjacent to RMV Open Space habitat areas, the County of Orange shall verify that measures to shield such lighting have been incorporated in the street improvement ~~building~~ plans.	~~Director, PDS~~ **Director, OC Planning**	Preparation of building plans in compliance with lighting measures		Each Applicable PA

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144	136 (MM 4.9-26) 145-150 (EIR 589, MM 4.9-30)	EIR 589	MM 4.9-30	Prior to issuance of grading (GA) permits	Biological Resources	Biological Resources Construction Plan	Biological Resources Construction Plan Criteria (BRCP)	Biological resources outside of the Proposed Project impact areas shall be protected during construction. To ensure this protection, the Project Applicant shall prepare and implement a Biological Resources Construction Plan (BRCP) that provides for the protection of the resource and established the monitoring requirements. The BRCP shall contain at a minimum the following:	~~Director, PDS~~ **Director, OC Planning**	Preparation and approval of a Biological Resources Construction Plan (BRCP)		Each PA
145	144 and 148-150 (EIR 589, MM 4.9-30) Item Nos. 146 and 147 have been integrated into 145 (originally three bullet points were separate items)	EIR 589	MM 4.9-30 (cont.)	Prior to issuance of grading (GA) permits	Biological Resources	Biological Resources Construction Plan, species protection, protective fencing	BRCP Design Measures	• Specific measures for the protection of sensitive amphibian, mammal, bird, and plant species during construction. • Identification and qualification of habitats to be removed. • Design of protective fencing around conserved habitat areas and the construction staging areas.	~~Director, PDS~~ **Director, OC Planning**	See above		Each PA
148	144-145 and 149-150 (EIR 589, MM 4.9-30)	EIR 589	MM 4.9-30 (cont.)	Prior to issuance of grading (GA) permits	Biological Resources	Biological Resources Construction Plan, Section 7 consultation, 1600 agreements, Arroyo Trabuco Golf Course	BRCP Wildlife Agency Requirements	• Specific construction monitoring programs for sensitive species required by Wildlife Agencies including, but not limited to, programs for the arroyo southwestern toad, western spadefoot toad, southwestern pond turtle, cactus wren, and coastal California gnatcatcher. Such measures shall be consistent with prior Section 7 consultations and 1600 agreements e.g., Arroyo Trabuco Golf Course.	~~Director, PDS~~ **Director, OC Planning**	See above		Each PA

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149	144-148 and 150 (EIR 589, MM 4.9-30)	EIR 589	MM 4.9-30 (cont.)	Prior to issuance of grading (GA) permits	Biological Resources	Biological Resources Construction Plan, Wildlife Agencies, Arroyo Trabuco Golf Course	BRCP Avoidance Measures	Preparation of measures required by Wildlife Agencies (e.g., Arroyo Trabuco Golf Course) for the protection of sensitive habitats including, but are not limited to, erosion and siltation control measures, protective fencing guidelines, dust control measures, staging locations, construction area limits, and biological monitoring requirements.	~~Director, PDS~~ **Director, OC Planning**	See above		Each PA
150	144-149 (EIR 589, MM 4.9-30)	EIR 589	MM 4.9-30 (cont.)	Prior to issuance of grading (GA) permits	Biological Resources	Biological Resources Construction Plan, biological monitoring	BRCP Monitoring	Provisions for biological monitoring during construction activities to ensure compliance and success of each protective measure. The monitoring procedures will (1) identify specific locations of wildlife habitat and sensitive species to be monitored; (2) identify the frequency of monitoring, monitoring methodology (for each habitat and sensitive species to be monitored); (3) list required qualifications of biological monitor(s); and (4) identify reporting requirements.	~~Director, PDS~~ **Director, OC Planning**	See above	Memo from biologist (GLA or other firm), accompanied by diagram identifying proposed development footprint and overlay of vernal pool location.	Each PA
157	158 (EIR 589, MM 4.9-37)	EIR 589	MM 4.9-37	Prior to issuance of grading permit as monitored by the County Biological Monitor	Biological Resources	Catalina mariposa lily, coastal sage scrub/native grassland restoration areas	Protection of Catalina mariposa lily	Catalina mariposa lily shall be salvaged and relocated to the coastal sage scrub/native grassland restoration and enhancement areas by the Project Applicant; or seed can be collected prior to project impacts for use in the seed mix for coastal sage scrub/native grassland restoration areas. The receiver sites shall support clay soils and other conditions suitable for Catalina mariposa lily.	~~Director, PDS~~ **Director, OC Planning**	Preparation and approval of Final Plant Species Translocation, Propagation and Management Plan	Satisfied by GLA's response to comment letter dated August 8, 2013.	Each Applicable PA

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158	157 (EIR 589, MM 4.9-37)	EIR 589	MM 4.9-37 (cont.)	Prior to initiation of grading as monitored by the County Biological Monitor	Biological Resources	Catalina mariposa lily	Protection of Catalina mariposa lily (cont.)	In addition, where feasible, clay soils shall be salvaged from grading areas and appropriately transported to restoration areas to provide a seed bank. Implementation details of the salvage and relocation program shall be identified in the Final Plant Species Translocation, Propagation and Management Plan, outlined in Appendix J-1.	~~Director, PDS~~ **Director, OC Planning**	Verification of Catalina mariposa lily salvage/ relocation		Each Applicable PA
163	164 (EIR 589, MM 4.9-40)	EIR 589	MM 4.9-40	Prior to issuance of a grading permit as monitored by the County Biological Monitor	Biological Resources	Mud nama inoculum	Protection of Mud nama inoculum	Mud nama inoculum (topsoil and dried plants to obtain seed) shall be collected prior to project impacts for use in the relocation of this species. The receiver sites shall support appropriate soils and other conditions suitable for mud nama.	~~Director, PDS~~ **Director, OC Planning**	Preparation and approval of Final Plant Species Translocation, Propagation and Management Plan		Each Applicable PA
164	163 (EIR 589, MM 4.9-40)	EIR 589	MM 4.9-40 (cont.)	Prior to initiation of grading as monitored by the County Biological Monitor	Biological Resources	Mud nama inoculum	Protection of Mud nama inoculum (cont.)	Implementation details of the salvage and relocation program shall be identified in the Final Plant Species Translocation, Propagation and Management Plan.	~~Director, PDS~~ **Director, OC Planning**	Verification of Mud nama inoculum seed collection		Each Applicable PA
166		EIR 589	MM 4.9-42	Prior to issuance of grading permit for those areas with federal or state endangered species, or jurisdictional land	Biological Resources	Section 404, 1600, and federal and state Endangered Species Act permits	Federal/State Endangered Species Act Permits	The project applicant shall obtain Section 404, 1600, and federal and state Endangered Species Act permits, as applicable.	~~Director, PDS~~ **Director, OC Planning** (CDFG, USFWS, ACOE)	Provide evidence of Section 404, 1600, and federal and state Endangered Species Act permits from the regulatory agencies	Regulatory agency permit summary letter from RMV [Hyperlink #15], accompanied by diagram identifying proposed development footprint and overlay of federal or state endangered species, or jurisdictional land location.	Each Applicable PA
167		EIR 589	MM 4.9-43	Prior to issuance of (GA) grading permit for PA3 or any portion thereof pertaining to the "ox-bow" area of the Gobernadora sub-basin	Biological Resources	Gobernadora sub-basin	Protection of Wildlife Corridor in "Ox-Bow" Area	In conjunction with future regulatory permitting, the project applicant shall examine further minimization of impacts to wetlands in the "ox-bow" area of the Gobernadora sub-basin in order to increase the dimension of Wildlife Corridor Linkage G	~~Director, PDS~~ **Director, OC Planning** (CDFG, USFWS, ACOE)	Provide evidence of permits from the regulatory agencies	Grading in PA3 and in the "ox-bow" area (shown on EIR Exhibit 4.9-8) shall be consistent with the approved State Master 1600 Streambed Alteration	PA-3

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											Agreement (MSAA) [Hyperlink #16] and Special Area Management Plan (SAMP) Subarea Permit [Hyperlink #17].	
170		EIR 589	MM 4.11-1	Prior to the approval of each Master Area ~~Subarea~~ Plan	Cultural and Paleontological Resources		Cultural Resources Management Plan (CRMP) Preparation	Prior to the approval of each Master Area Plan ~~final plans and specifications for the development of Area Plans~~, the project applicant shall prepare a Cultural Resources Management (CRM) Plan to address the presence of cultural resources, evaluate the significance of any resource finds, provide final mitigation and monitoring program recommendations, and determine proper retention or disposal of resources. The CRM Plan shall be reviewed and approved by the County Director of Planning ~~in Consultation with the County Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities.~~	~~Director, PDS in conjunction with the Manager of Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **Director, OC Planning**	Preparation and approval of Cultural Resources Management Plans	PA1 and PA8 Cultural Resources Plans [Hyperlink #18] have been approved, consistent with EIR 589 Cultural Resources chapter.	Each PA
172	173-176 (EIR 589, MM 4.11-3) 571 (SC 4.11-1)	EIR 589	MM 4.11-3	Prior to issuance of grading permit in vicinity of identified resources	Cultural and Paleontological Resources	CEQA Guidelines §15126.4(b) and Public Resources Code §21083.3	CRMP Mitigation Options	As applicable, the following archaeological sites shall be mitigated to a less than significant level: CA-ORA-656, -753, -754, -882, -1043, -1048, -1121, -1122, -1125, -1137, 1144, -1185, -1449, -1556, -1559, -1560, and -1565, and historic sites CA-ORA-29, 30-176631, 30-176633, 30-176634, and 30-176635. Based on the mitigation standards set forth in the California Environmental Act (CEQA) Guidelines §15126.4(b) and Public Resources Code §21083.2, mitigation shall be accomplished through implementation of one of the following mitigation options consistent with the Cultural Resources Management	~~Director, PDS in conjunction with the Manager of Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **Director, OC Planning**	Mitigate impacts to archaeological sites through implementation of options set forth in Cultural Resources Management Plan (see below)	Only Pre-historic sites CA-ORA -1043 (Cow Camp Road), -1048 (PA3), -1121 (PA3), -1122 (PA3), -1559 (PA2), -1560 (PA2), and -1565 (PA3) and historic sites CA-ORA-29 (PA2) still need to be addressed. **Resource Organization Settlement Agreement eliminated development in areas which contain prehistoric sites CA-ORA-1125, -1137, 1144, -**	Each Applicable PA

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								Planning Director, *BonTerra, 8/25/06)*			**1185, -1449, -1556, and historic sites CA-ORA-30-176631.**	
173	172 and 174-176 (EIR 589, MM 4.11-3) 571 (SC 4.11-1)	EIR 589	MM 4.11-3 (cont.)	Prior to issuance of grading permit in vicinity of identified resources; during grading activities	Cultural and Paleontological Resources	Fuel modification, avoidance, archaeological monitor	CRMP Verification and Avoidance	a. Relocation of grading boundaries/fuel modification zones to completely avoid disturbance to the site(s). Should the boundary relocation be infeasible, an archaeological monitor shall be present during grading and fuel modification brush clearance in the vicinity of archaeological resources. Fencing or stakes shall be erected outside of the sites to visually depict the areas to be avoided during construction.	~~Director, PDS in conjunction with the Manager of Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **Director, OC Planning**	Verify archaeological sites have been avoided or the presence of a county certified archaeologist during grading and brush removal	Approved Planning Area 1 Archaeology report [Hyperlink #19] addresses prehistoric site CA-ORA-882. Approved Planning Area 8 Archaeology report [Hyperlink] addresses prehistoric sites CA-ORA-753 & 754 and historic sites 30-176633, -176634, and -176635 Prehistoric site CA-ORA-656 is not a development area, but rather a utility area (not applicable to Ranch Plan development).	Each Applicable PA
174	172-173 and 175-176 (EIR 589, MM 4.11-3) 571 (SC 4.11-1)	EIR 589	MM 4.11-3 (cont.)	Prior to issuance of grading permit in vicinity of identified resources	Cultural and Paleontological Resources	Phase III Data Recovery	CRMP Phase III Data Recovery	b. Prior to grading in the vicinity of archaeological resources (note: confidential archaeological mapping is on file at the County of Orange), Phase III data recovery (salvage excavations) shall be conducted for these archaeological sites or any other sites within the potential impact area of development that cannot be avoided. The Phase III work shall provide sufficient scientific information to fully mitigate the impacts of development on these sites and be performed in accordance with standards of the State Office of Historic Preservation.	~~Director, PDS in conjunction with the Manager of Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **Director, OC Planning**	Conduct Phase III data recovery for archaeological sites		Each Applicable PA

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175	172-174 and 176 (EIR 589, MM 4.11-3) 571 (SC 4.11-1)	EIR 589	MM 4.11-3 (cont.)	During performance of grading activities	Cultural and Paleontological Resources	California Health and Safety Code Section 7050.5, human remains, County Coroner	Human Remains Encountered During Construction	In accordance with California Health and Safety Code Section 7050.5, if human remains are found, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains. The County Coroner shall make such determination within two working days of notification of discovery. The County Coroner shall be notified within 24 hours of the discovery. If the County Coroner determines that the remains are or believed to be Native American, the County Coroner shall notify the Native American Heritage Commission in Sacramento within 24 hours.	~~Director, PDS in conjunction with the Manager of Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **Director, OC Planning**	If human remains found, stop work and follow identified procedures		Each Applicable PA
176	172-175 (EIR 589, MM 4.11-3) 571 (SC 4.11-1)	EIR 589	MM 4.11-3 (cont.)	During performance of grading activities	Cultural and Paleontological Resources	Native American Heritage Commission, California Public Resources Code Section 5097.98, human remains	Native American Human Remains Encountered During Construction	In accordance with California Public Resources Code Section 5097.98, the Native American Heritage Commission must immediately notify those persons it believes to be the most likely descended from the deceased Native American. The descendents shall complete their inspection within 24 hours of notification. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.	~~Director, PDS in conjunction with the Manager of Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **Director, OC Planning**	If Native American remains found, stop work and follow identified procedures		Each Applicable PA

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177		EIR 589	MM 4.12-1	Prior to approval of the first Master Area Plan	Recreation	Regional Riding and Hiking Trails, Bikeways Implementation Plan,, community trails,	Master Trail and Bikeways Implementation Plan:	Prior to approval of the first Master Area Plan, the applicant shall develop a Master Trail and Bikeways Implementation Plan for the Ranch Plan that would establish viable routes for trails and bikeways to provide connectivity to community PAs and adjacent areas in adjacent developments and with existing and proposed recreational facilities. The Master Trail and Bikeways Implementation Plan shall meet with the approval by the Director of PSD ~~in consultation with the Manager, OC Parks Harbors, Beaches & Parks Program Management~~.	~~Director, PDS in conjunction with the Manager of Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **Director, OC Planning**	**Completed: Preparation and approval Master Trail and Bikeways Implementation Plan**	Approved July 18, 2006 Master Trail and Bikeways Implementation Plan [Hyperlink #21]	Ranch Plan Wide
178	179-182 (EIR 589, MM 4.14-1)	EIR 589	MM 4.14-1	Prior to issuance of a GA grading permit	Hazards and Hazardous Materials	Environmental contaminants, Title 8	Health and Safety Contingency Plan (HSCP) Criteria	Prior to the issuance of a grading permit, the contractor shall develop an approved Health and Safety Contingency Plan (HSCP) in the event that unanticipated/ unknown environmental contaminants are encountered during construction. The plan shall be developed to protect workers, safeguard the environment, and meet the requirements of the California Code of Regulations (CCR), Title 8, General Industry Safety Orders–Control of Hazardous Substances. The HSCP should be prepared as a supplement to the Contractor's Site-Specific Health and Safety Plan, which should be prepared to meet the requirements of CCR Title 8, Construction Safety Orders. Specifically, the HSCP must:	~~Director, PDS (OCFA)~~ **Director, OC Planning (Health Care Agency and OCFA)**	Preparation and approval of a Health and Safety Contingency Plan (with subsequent implementation)	PA1 approved Health and Safety Contingency Plan HSCP [Hyperlink #22]	Each PA

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179	178 and 180-182 (EIR 589, MM 4.14-1)	EIR 589	MM 4.14-1 (cont.)	See above	Hazards and Hazardous Materials	Soil contamination, groundwater contamination, air contamination	HSCP Approval	1) Establish methods, procedures, and processes necessary to identify, evaluate, control, or mitigate all safety and health hazards associated with any soil, groundwater and/or air contamination that may be encountered during field construction activities.	See above	See above	PA1 approved Health and Safety Contingency Plan HSCP [Hyperlink #22]	Each PA
180	178-179 and 181-182 (EIR 589, MM 4.14-1)	EIR 589	MM 4.14-1 (cont.)	See above	Hazards and Hazardous Materials		HSCP Application	2) Apply to all site construction workers, on-site subcontractors, site visitors, and other authorized personnel who are involved in construction operations.	See above	See above	PA1 approved Health and Safety Contingency Plan HSCP [Hyperlink #22]	Each PA
181	178-180 and 182 (EIR 589, MM 4.14-1)	EIR 589	MM 4.14-1 (cont.)	See above	Hazards and Hazardous Materials		HSCP Approval	3) Be approved by the ~~Manager of Subdivision and Grading Services (PDS)~~ Manager OC Planned Communities in consultation with the Manager of Environmental Resources (PFRD) and/or their appointed consultant team.	See above	See above	PA1 approved Health and Safety Contingency Plan HSCP [Hyperlink #22]	Each PA
182	178-181 (EIR 589, MM 4.14-1)	EIR 589	MM 4.14-1 (cont.)	See above	Hazards and Hazardous Materials	Environmental contaminants	HSCP Trigger	The HSCP will take effect only if materials affected by environmental contaminants are exposed during construction. This includes undocumented waste materials, contaminated soils, affected groundwater, and related substances that may be classified as hazardous or regulated materials, and/or materials that could endanger worker or public health. If affected materials are encountered, the HSCP will be implemented to reduce the potential exposure to the environment and workers at the site. All site workers will be required to perform work in a prescribed manner to reduce the potential that they will endanger themselves, others, or the general public.	See above	See above	PA1 approved Health and Safety Contingency Plan HSCP [Hyperlink #22]	Each PA

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183		EIR 589	MM 4.14-2	Prior to issuance of GA grading permits	Hazards and Hazardous Materials	SCAQMD Rule 1166	HSCP Contingency Plan	During excavation of environmentally affected soil, groundwater bodies materials are encountered on-site, the project engineer shall be quickly mobilized to evaluate, assess the extent of, and mitigate the affected materials. The contractor or owner's consultant shall be responsible for implementing all applicable sampling and monitoring of the project. At present, applicable sampling and monitoring activities are expected to include air monitoring (both for personal protection and SCAQMD Rule 1166 compliance), collecting soil and groundwater samples for analysis, and documenting mitigation activities. Specific applicable sampling and monitoring requirements will vary, depending upon the nature, concentration, and extent of affected materials encountered.	~~Director, PDS~~ **Director, OC Planning**	Show condition wording as notes on approved GA grading plans	PA1 approved Health and Safety Contingency Plan HSCP [Hyperlink #22]	Each PA
184		EIR 589	MM 4.14-3	Prior to approval of Subarea Plans for areas within Planning Areas 1, 2, 3 **and** 4 ~~and 7~~, that have been used for agricultural activities where pesticides or herbicides have been used	Hazards and Hazardous Materials	Agricultural activities, pesticides, herbicides, Department of Toxic Substance Control (DTSC)	Pesticides and Herbicides	Prior to approval of Area Plan for areas within Planning Areas 1, 2, 3 and 4 ~~and 7~~, that have been used for agricultural activities where pesticides or herbicides have been used, the applicant shall conduct an investigation to assess the possible presence of residual pesticides and herbicides in accordance with applicable Department of Toxic Substance Control (DTSC) Guidance for Sampling Agricultural Soils. If necessary, a remediation program shall be developed and implemented for those areas where the soils testing program has identified that residual pesticides and herbicides exceed DTSC Guidance, to ensure soils meet standards for proposed uses within previous agricultural areas. If significant contamination is encountered, the results of	~~Director, PDS~~ **Director, OC Planning** (Orange County Health Care Agency)	Approved site investigation to assess the possible presence of residual pesticides and herbicides in accordance with applicable Department of Toxic Substance Control (DTSC) Guidance for Sampling Agricultural Soils. Implementation of remediation program, if required.	PA1 Completed: Subareas 1.1, 1.2 and 1.5; Testing determined that area not contaminated. Subareas 1.3 and 1.4; EEI Soil Investigation Report and Mitigation Work Plan (Hyperlink ~~#23~~) PA-7 portion no longer applicable, per Resource Organization Settlement Agreement	PA-1-4 ~~and 7~~

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								the testing, investigation, and will be provided to OCHCA, or other appropriate agency, for direction and oversight.				
185		EIR 589	MM 4.14-4	Prior to issuance of a grading permit or a demolition permit for any on-site building constructed prior to 1973	Hazards and Hazardous Materials	Lead-based paint, buildings constructed prior to 1973	Lead Based Paint	Prior to issuance of a grading permit or a demolition permit for any on-site building constructed prior to 1973, the building shall be screened for lead-based paint prior to demolition. If lead-based paint is identified, it shall be mitigated in accordance with all applicable federal, state and local regulatory requirements.	~~Director, PDS~~ **Director, OC Planning** (Orange County Health Care Agency)	Verification of screening for lead based paint; mitigation, if required		**PA1, PA3 and PA4** ~~Each Applicable PA~~
186		EIR 589	MM 4.14-5	Prior to issuance of a demolition permit for any structure constructed before 1980	Hazards and Hazardous Materials	Asbestos, buildings constructed prior to 1980	Asbestos	Prior to issuance of a demolition permit for any structure constructed before 1980, the applicant shall test for asbestos containing materials. Should the building being demolished contain asbestos, the applicant shall comply with notification and asbestos removal procedures outlined in SCAQMD Rule 1403 to reduce asbestos related health risks.	~~Director, PDS~~ **Director, OC Planning** (Orange County Health Care Agency, SCAQMD)	Verification of testing for asbestos; mitigation if required		Each Applicable PA
187		EIR 589	MM 4.14-6	Prior to issuance of a grading permit for Planning Areas 1,3,4,5 and 8	Hazards and Hazardous Materials	Underground storage tanks (USTs, fuel dispensers, clarifiers and crushing operations, maintenance areas, petroleum hydrocarbons, heavy metals	Storage Tanks	Prior to issuance of grading permits for Planning Areas 1, 3, 4, 5, and 8, respectively, the applicant shall remove, or require the leaseholder to remove, all storage tanks (underground storage tanks, or USTs, and above ground storage tanks, or AGTs), fuel dispensers, clarifiers and crushing equipment in compliance with OCHCA regulations. This shall include soil and groundwater sampling in and around any existing UST's, dispensers, clarifiers, crushing operations, and maintenance areas, with analysis for petroleum hydrocarbons, heavy metals, and PAHs to determine if any contaminates exist in the tank pit area or in surrounding areas. If contaminates exist, the level of impact shall be	~~Director, PDS~~ **Director, OC Planning** (Orange County Health Care Agency)	Verification of removal of UST and AGT, fuel dispensers, clarifiers, and crushing equipment		PA-1, 3-5 and 8

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								assessed and remediation plan shall be developed, if required pursuant to applicable laws and regulations. If significant contamination is encountered, the results of the testing/investigation, etc. will be provided to OCHCA, or other appropriate agency, for direction and oversight.				
188		EIR 589	MM 4.14-7	Prior to approval of Subarea Plans for areas within Planning Areas 1, 3, and 5, respectively, where soil staining has been identified	Hazards and Hazardous Materials	Contaminated soils, remediation	Soil Remediation	Prior to approval of Area Plan for areas within Planning Areas 1, 3, and 5, respectively, where soil staining has been identified, the applicant or leaseholder shall test the contaminated soils to assess their level of impact and a remediation plan shall be developed, if required pursuant to applicable laws and regulations. If significant contamination is encountered, the results of the testing/investigation shall be provided to OCHCA, or other appropriate agency, for direction and oversight of the remediation.	~~Director, PDS~~ **Director, OC Planning** (Orange County Health Care Agency)	Verification of testing of soils, with subsequent remediation, if required.		PA-1, 3 and 5
189		EIR 589	MM 4.14-8	Prior to issuance of grading permits for the portion of Planning Area 3 currently occupied by Catalina Pacific Concrete (CPC)	Hazards and Hazardous Materials		Catalina Pacific Concrete	Prior to issuance of grading permits for the portion of Planning Area 3 currently occupied by Catalina Pacific Concrete (CPC), the applicant or leaseholder shall provide verification to OCHCA that the truck washout recycling pond and related chemicals within the CPC lease area have been dismantled/removed and the pond contents removed/disposed in compliance with applicable regulations.	~~Director, PDS~~ **Director, OC Planning** (Orange County Health Care Agency)	Verification of dismantling of truck washout recycling pond and related chemicals within the CPC lease Area		PA-3

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196	197 (EIR 589, MM 4.14-13)	EIR 589	MM 4.14-13	Prior to issuance of grading permits	Hazards and Hazardous Materials	Environmental Site Assessments (ESA) , Phase I Update, Phase II Update	Environmental Site Assessments (ESA) Update	Prior to issuance of grading permits within each Planning Area, Phase I Environmental Site Assessments (ESAs) will be updated for that grading permit area. If the Phase I Update identifies new actual or potential impacts, a Phase II ESA will be completed as necessary for the grading area by the landowner or subsequent project applicant. During the Phase II ESA, samples from potential areas of concern will be collected and submitted for laboratory analysis to confirm the nature and extent of potential impacts. If hazardous materials are identified during the site assessments, the appropriate response/remedial measures will be implemented including directives of the OCHCA and/or Regional Water Quality Control Board (RWQCB), as appropriate.	~~Director, PDS~~ **Director, OC Planning** (Orange County Health Care Agency)	Updated Environmental Site Assessment and, if required, prepare Phase II (with subsequent remediation, if necessary)		Each PA
197	196 (EIR 589, MM 4.14-13)	EIR 589	MM 4.14-13 (cont.)	During construction	Hazards and Hazardous Materials	Remedial measures	ESA Remedial Measures	If soil is encountered during site development that is suspected of being impacted by hazardous materials, work will be halted and site conditions will be evaluated by a qualified environmental professional. If requested by the qualified environmental professional, the results of the evaluation will be submitted to OCHCA and/or RWQCB, and the appropriate remedial measures will be implemented, as directed by OCHCA, RWQCB, or other applicable oversight agency, until all specified requirements of the oversight agencies are satisfied and a no-further-action status is attained.	~~Director, PDS~~ **Director, OC Planning** (Orange County Health Care Agency)	Stop work upon encountering condition; prepare evaluation and submit to OCHCA and/or RWQCB (as directed)		Each PA

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198	199 (EIR 589, MM 4.14-14)	EIR 589	MM 4.14-14	Prior to approval of Master Area Plans 3	Hazards and Hazardous Materials		Oil Well Approval	The Master Area Plan prepared for those Planning Areas containing oil wells (Planning Areas 3) shall graphically depict the location of all oil wells. **Revised to remove reference to PA-9, per Resource Organization Settlement Agreement**	~~Director, PDS~~ **Director, OC Planning** (OCFA)	~~Verification of~~ Graphic depiction of oil well locations on PA3 Master Area Plan		
199	198 (EIR 589, MM 4.14-14)	EIR 589	MM 4.14-14 (cont.)	Prior to issuance of building permits for those locations with oil wells.	Hazards and Hazardous Materials	Division of Oil, Gas, and Geothermal Resources, remedial action	Verification of Oil Well Abandonment Procedures	Prior to issuance of building permits for those locations with oil wells, the applicant shall submit verification that final building plans have undergone review by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources and remedial action in compliance with well abandonment procedures has been completed.	~~Director, PDS~~ **Director, OC Planning** (OCFA)	Verification of review by Department of Conservation, Division of Oil, Gas		
200		EIR 589	MM 4.14-15	Prior to the approval of tentative subdivision maps	Hazards and Hazardous Materials		Wildland Fire Hazard	Prior to approval of tentative subdivision maps and site-specific development projects within the project area, the landowner or subsequent project applicant shall submit evidence demonstrating compliance with all applicable OCFA conditions for development projects	~~Director, PDS~~ **Director, OC Planning** (OCFA)	Preparation and approval Ranch Plan Fire Protection Program	Approved Fire Protection Program dated July 31, 2007 (Hyperlink #24)	Each PA
201	202 & 204 (EIR 589, MM 4.15-1 cont. & MM 4.15-3) 253 (PC Text, Cond. 8)	EIR 589	MM 4.15-1	Prior to approval of first Master Area Plan	Public Services and Facilities	Ranch Plan Fire Protection Program, Wildland Management Plan	Fire Protection Program	The Ranch Plan Fire Protection Program shall be approved prior to the approval of the first Area Plan. The Ranch Plan project shall conform to the Orange County Fire Authority (OCFA) Special Fire Protection Area (SFPA) Guidelines and exclusions shall be applied to the project by application on a subarea basis in conformance with the Ranch Plan Fire Protection Program. The project applicant shall participate in, and maintain, an approved OCFA Wildland Management Plan for all wildland interface areas and designed open spaces.	~~Director, PDS~~ **Director, OC Planning** (OCFA)	Preparation and approval Ranch Plan Fire Protection Program	Approved Fire Protection Program dated July 31, 2007 (Hyperlink #24)	PC-Wide

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
202	201 & 204 (EIR 589, MM 4.15-1 cont. & MM 4.15-3) 253 (PC Text, Cond. 8)	EIR 589	MM 4.15-1 (cont.)	Prior to approval of first tentative tract map ~~subdivision~~ (as modified by PC Text, Condition 7)	Public Services and Facilities	Fire service, emergency service, medical service	Secured Fire Protection Agreement	a Planned Approval of Ranch subdivision, the developer shall execute a Secured Fire Protection Agreement with OCFA for the provision of necessary approved street improvement plans facilities, apparatus, and fire and rescue supplies and equipment for the Ranch Plan. This comprehensive plan will address fire and emergency medical service delivery within the project site, and will specify the timeframes and trigger points for initiation of services within the project by geographic area. The Secured Fire Protection Agreement shall ensure that OCFA fire protection and emergency medical performance objectives can be achieved for the Ranch Plan area. The applicant will ensure that development is phased in a matter that allows the maximum use of existing fire protection resources before new resources are required to be established.	~~Director, PDS~~ **Director, OC Planning** (OCFA)	Preparation and approval Secured Fire Protection Agreement	Secured Fire Protection Agreement [Hyperlink #25] approved in two increments: PA1 and the remainder of the Planned Community	PC-Wide
204	201-202 (EIR 589, MM 4.15-1) 253 (PC Text, Cond. 8)	EIR 589	MM 4.15-3	Prior to approval of the first Master Area Plan	Public Services and Facilities	Adaptive management tools, fuel modeling, defensible space	Fire Protection Program - Fuel Modification	Prior to approval of the first Master Area Plan, applicant shall gain Orange County Fire Authority (OCFA) approval of a Ranch Plan Fire Protection Program, per the requirements of Section II.D, including a Planned Community-wide Fuel Modification Plan. If adaptive management tools (grazing, prescribed fires, etc.) for controlling the growth of vegetation surrounding Ranch Plan development are not successful and vegetation transitions from Fuel Model 2 (FM2) to Fuel Model 4 (FM4), as classified by the BEHAVE Fire Behavior Fuel Modeling System, the OCFA may choose a total Fuel Modification zone width based on the BEHAVE model	~~Director, PDS~~, **Director, OC Planning** and Orange County Fire Authority	Preparation and approval Ranch Plan Fire Protection Program	Approved Fire Protection Program dated July 31, 2007 (Hyperlink #24)	PC-Wide

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								anticipated fuel lengths plus 20-feet for defensible space.				
205		EIR 589	MM 4.15-4	Prior to approval of the first "A" tentative tract map	Public Services and Facilities	Level of Sheriff services	Sheriff's Agreement	Prior to approval of the first tentative tract map, except for financing purposes, the Orange County Sheriff's Department and the project applicant shall enter into an agreement specifying the level of service and supporting facilities needed to adequately serve the project area, and the amount of funding to be provided by the project applicant. The agreement will specify the timeframes and trigger points for initiation of services within the project by geographic area.	Orange County Sheriff's Department	Negotiation and execution of an agreement for Sheriff's service and support facilities	Approved Sheriff Agreement Impact Mitigation Agreement - OC Sheriff-Coroner and RMV approved by OC Board of Supervisors February 6, 2007 [Hyperlink #45]	PC-Wide
206		EIR 589	MM 4.15-5	Prior to issuance of residential building permits (excluding age-qualified units)	Public Services and Facilities	California Government Code Section 65995	CUSD Agreement	Prior to issuance of any residential building permit, excluding senior housing, the applicant shall enter into an agreement with CUSD regarding the development of future facilities and payment of costs. The agreement shall, at a minimum, provide for the payment of fees pursuant to California Government Code Section 65995. If fees are paid, the amount of fees to be paid will be determined based on the established State formula for determining construction costs. Applicable fees shall be paid prior to the issuance of each building permit.	Capistrano Unified School District (CUSD)	Payment of school fees	County Counsel's letter of October 19, 2012 concludes that an agreement with CUSD is not required.	PC-Wide
207		EIR 589	MM 4.15-6	Prior to recordation of final tract maps where the relocation of the Santa Fe Pipeline is required	Public Services and Facilities	Kinder-Morgan, fuel pipeline	Santa Fe Pipeline	Prior to recordation of final tract maps where the relocation of the Santa Fe Pipeline is required, except for financing purposes, the project applicant shall coordinate with the pipeline owner, Kinder-Morgan, to ensure that no notable disruptions to the fuel pipeline that extends through the project site would occur as a result of project implementation. Should an alignment for the SR-241	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning**	Applicant shall coordinate with the pipeline owner, Kinder-Morgan, to ensure that no notable disruptions to the fuel pipeline that extends through the project site would occur as a result of project implementation	Not applicable: The February 2006 FTC alignment allows the pipeline to cross the SR-241 alignment within the Donna O'Neill open space reserve area, which contradicts the requirement stating "Pipeline shall not be placed within the	Each Applicable PA

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								alignment be selected at the time of recordation of the final tract maps, the relocation will not place the pipeline within the right-of-way for the SR-241 extension, nor preclude the relocation of any portion of the pipeline currently within the right-of-way for the SR-241 alignment.			right-of-way for the SR-241 extension".	
208		PC Text	Gen. Reg. 11	Annually	Annual Monitoring Report	Infrastructure, Growth Management Program, Development Monitoring Program,	Annual Monitoring Report	An Annual Monitoring Report (AMR) shall be prepared and submitted in the fall of each year to the Director, PDS for forwarding to the County Chief Executive Officer (CEO). The submittal of an AMR is required for conformance with the Growth Management Program of the Land Use Element of the Orange County General Plan and the County's Annual Development Monitoring Program. The Board of Supervisors, in the annual adoption of the Development Monitoring Program, may identify a significant imbalance between development projections and planned infrastructure or in the proportionate development of residential, commercial and employment land uses. The Board of Supervisors may then defer subdivision approval within the Ranch Plan PC until approaches capable of resolving imbalances are proposed to and approved by the Board of Supervisors. The AMR will be the project proponent's opportunity to demonstrate mitigation measures and implementation strategies, which will ensure adequate infrastructure for the community. *[Note: the first Annual Monitoring Report was approved on February 8, 2008.]*	~~Director, PDS~~ **Director, OC Planning** for forwarding to the County Chief Executive Officer (CEO)	Preparation of an Annual Monitoring Report	First AMR (Template) was approved February 8, 2008 [Hyperlink #26]. Subsequently there has been no development activity, hence no AMRs for 2009 and 2010.	PC-Wide

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214		PC Text	Gen. Reg. 15.a.	Prior to Approval of a Master Area Plan or Subarea Plan	Planning Area Boundaries		Measure PA Boundaries from Street Centerline	Except where otherwise indicated, dimensions are measured from the centerlines of streets.	~~Planning Commission~~ ~~Director of PDS~~ **Director, OC Planning**	Amend Statistical Table & Development Map		Each PA
215		PC Text	Gen. Reg. 15.b.	Prior to Approval of an Area Plan	PA Boundaries, Acreages, Densities		Master Area Plan to Establish PA Boundaries, Acreages and Densities	Boundaries, acreage and densities not dimensioned on the PC Development Map (see Exhibit 6) shall be established during the Area Plan submittal and approval process. If not in compliance with the PC Development Map, the procedures in Section II.A.4 shall be followed.	~~Planning Commission~~ ~~Director of PDS~~ **Director, OC Planning**	Amend Statistical Table & Development Map		Each PA
216		PC Text	Gen. Reg. 15.c.	Prior to Approval of an Area Plan	PA Boundaries Revisions		Reallocate Acreage from PA to PA	Any revision to reallocate acreage from one Planning Area to another Planning Area by more than ten percent (10%) shall require an amended Statistical Table, and an Area Plan to be approved by the Planning Commission. Changes of ten percent (10%) or less shall require approval of the Director, PDS, subject to Section II.A.4.	~~Planning Commission~~ ~~Director of PDS~~ **Director, OC Planning**	Amend Statistical Table & Development Map		Each PA
222		PC Text	Gen. Reg. 18	Prior to approval of first tentative tract map	Compliance with OC Local Park Code	Local park sites, Quimby Act,	Local Park Implementation Plan	Local park sites will be identified ~~provided~~ in accordance with the provisions of the Orange County Local Park Code as contained in the Park Implementation Plan for the Ranch Plan PC Area. Park sites will also be identified at the Master Area Plan level per Section II.B.3.a.6. *[Note: The Ranch Plan Local Park Implementation Plan was approved on March 14, 2007.]*	Subdivision Committee	Completed (Hyperlink)	Establish consistency with approved March 14, 2007 Ranch Plan Local Park Implementation Plan [Hyperlink #27]	Each PA
223		PC Text	Gen. Reg. 19	Prior to each Temporary Event	Temporary Uses		Temporary Special Community Events	Temporary Special Community Events shall be allowed per Section III.J.8 of this Ranch Plan PC Text.	~~Director PDS~~ **Director, OC Planning**	Compliance with PC Program Text Section III.J.8		Each PA

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224	397 (EIR 589, PDF 4.15-5)	PC Text	Gen. Reg. 20	Prior to approval of the first tentative tract map in each Planning Area	Electrical Lines	SDG&E	Subsurface Electric Transmission Lines	Unless otherwise waived by the Director, PDS, (or determined not to be feasible by SDG&E per Final Program EIR 589, Project Design Feature 4.15-5) all permanent electric transmission lines less than 66 K.V. shall be subsurface within those portions of the Ranch Plan PC Area approved for development.	~~Director PDS~~ **Director, OC Planning**	Evidence of SDG&E approval of plans for subsurface lines	Undergrounding is only required within areas designated for development, not within open space areas. If a waiver is requested (as referenced in Gen. Reg. 20), OC Planning may consider financial hardship as a criteria.	Each PA
225	416 (EIR 589, PDF 4.10.3)	PC Text	Gen, Reg. 21	Prior to issuance of building permits in Planning Areas 3 and 4 adjacent to Caspers Wilderness Park	Exterior Lighting	Caspers Wilderness Park, diffusion of refractive light	Refractive Light Adjacent to Caspers Park	Within Planning Area 4 (PA-4) and along the easterly development edge of Planning Area 3 (PA-3) adjacent to Caspers Wilderness Park, the exterior lighting shall be designed and located to confine direct rays to the premises. In addition, parking lots and lighting within PA-4 and along the easterly development edge of PA-3 shall be designed and constructed in a manner that minimizes the diffusion of refractive light into surrounding neighborhoods and/or into the night sky.	~~Director PDS~~ **Director, OC Planning**	Plans to confine direct rays to the premises		PA-3 & 4
226		PC Text	Gen, Reg. 22	Prior to approval of Master Area Plan for Planning Areas 3 and 4	Compatibility	Caspers Wilderness Park, exterior walls, roofing materials	Exterior Treatments Adjacent to Caspers Park	Within Planning Area 4 and along the easterly development edge of Planning Area 3 adjacent to Caspers Wilderness Park, the Master Area Plan shall demonstrate that the exterior walls, and particularly the roofing materials, of homes and businesses visible from Caspers Regional Park are compatible with the natural surroundings.	Planning Commission	Evidence of compatibility with natural surroundings		PA-3 & 4
227		PC Text	Gen. Reg. 23	Prior to approval of the first tentative tract map in each Planning Area containing FP-2 Floodplain District	Floodplain	FEMA, LOMR, FIRM, Floodplain zoning Sections 7-9-48 and 7-9-113, flooding hazards	Flooding District Regulations	The Floodplain category, as indicated on the Ranch Plan PC Zoning Map (Exhibit 3), is intended to recognize the Floodplain District regulations per Sections 7-9-48 and 7-9-113 of the Orange County Zoning Code as pertain to areas of the County which, under present conditions, are	~~Director PDS~~ **Director, OC Planning**	Each subdivision map to appropriately identify the FP-2 Floodplain District	The intent of this condition is to ensure that all habitable structures comply with OC Zoning Code Sections 7-9-48 and 7-9-113. OC Public Works defers to the	Each Applicable PA

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								subject to periodic flooding and accompanying hazards.			Federal Emergency Management Agency (FEMA) regarding any approved Letter of Map Revision (LOMR) regarding the location of the FP-2 Floodplain District boundaries or Flood Insurance Rate Maps (FIRM).	
241		PC Text	Gen. Reg. 27	Each Master Area Plan	Senior Housing	Development table, Senior Housing dwelling units	Provision of Senior Housing	Of the 14,000 dwelling units proposed within the Ranch Plan PC Area, the Final Program EIR 589 has analyzed the provision of approximately 6,000 senior citizen housing dwelling units. Each Master Area Plan shall provide a statistical table estimating the proposed senior citizen housing dwelling units by Planning Subarea. [Note: for the purposes of clarification, the beginning of the second sentence of this requirement should be interpreted to read as follows: Each Master Area Plan shall provide a Master Development Table estimating the proposed ...]	Planning Commission	Inclusion in Master Area Plan of a development ~~statistical~~ table estimating the proposed senior citizen housing dwelling units by Planning Subarea	Senior citizen (age qualified) housing units are not tracked as part of the Statistical Table (Exhibit 7 of the PC Program Text). These units are actually to be tracked as part of the Master Development Table, as described on Page 10 of the Ranch Plan Planning Handbook [Hyperlink #29]	Each PA
242		PC Text	Gen. Reg. 27 (cont.)	Each Master Area Plan	Senior Housing	Senior Housing dwelling units, Annual Monitoring Report	Location of Senior Housing	Each subsequent Subarea Plan shall then specify the location and number of Senior Housing dwelling units as regulated by Section III.A.5 of this Ranch Plan PC Text. An Annual Monitoring Report (per General Note 11) will be prepared each year as an inventory of dwelling units.	Planning Commission	Preparation of a development table specifying the Subarea location and number of Senior Housing dwelling units		Each PA
243	244 (PC Text Cond. 1 cont.) 376 (EIR 589, PDF 4.1-2)	PC Text	Cond. 1	First Area Plan for each Planning Area	Master Area Plans		Master Area Plan Submittal Criteria	An Area Plan is required to be prepared for each of the Ranch Plan PC Planning Areas proposed as development areas ~~(i.e., Planning Areas 1 through 9), but not required for Planning Area 10.~~ The first Area Plan filed within each Planning	Planning Commission	Preparation of a Master Area Plan covering the entire Planning Area in accordance with requirements / contents specified in PC Text Section II.B.3.a		Each PA

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								Area plan means a Master Area Plan covering the entire Planning Area addressing the requirements listed in Section II.B.3.a of this Ranch Plan PC Text. Prior to approval of any subdivision, a Subarea Plan shall address the requirements of Section II.B.3.b of this Ranch Plan PC Text. **[Note: The end of the first sentence of this Condition of Approval shall be interpreted as: "… (i.e., Planning Areas 1 through 5 and 8). An Area Plan is not required for Planning Area 6, 7, 9 and 10." This clarification brings the text into conformance with Section 4 of the Resource Organization Settlement Agreement (ROSA) approved by the Orange County Board of Supervisors on August 16, 2005, which eliminates Development Area designations in PA6, PA7 and PA9. No Area Plans are required for PA6, PA7, PA9 or PA10]**				
244	243 (PC Text Cond. 1 cont.) 377 (EIR 589, PDF 4.1-2)	PC Text	Cond. 1 (cont.)	Prior to approval of any tentative tract subdivision map	Subarea Plans		Subarea Plan Submittal Criteria	Prior to approval of any subdivision, a Subarea Plan shall address the requirements of Section II.B.3.b of this Ranch Plan PC.	Planning Commission	Preparation and submittal by applicant	Compliance with Checklist III-2	Each PA
245		PC Text	Cond. 2	Prior to recordation of each Final Tract Map, except for financing purposes	Master Area Plan Monitoring	Ranch Plan Monitoring Program, AMR	Master Area Plan Monitoring Summary Report	Prior to recordation of each Final Tract Map, except for financing purposes, applicant shall submit a summary report to assist the Director, PDS in monitoring approvals within the framework of each Master Area Plan. Information to be provided shall include, but not be limited to, each tentative tract map and Site Development Permit number and approval date, fuel modification plans and park implementation plans.	~~Director PDS~~ **Director, OC Planning**	Ranch Plan Monitoring Program ~~Prepare and submit summary report (containing identified information)~~	Accomplished with annual submittal along with AMR; does not require separate submittal of information.	Each PA

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247	248-249 (Cond. 4) 14-29 (MM 4.5-1), 30 (MM 4.5-2) and 248-250 (PC Text Conds. 4 & 5)	PC Text	Cond. 4	Prior to the approval of the first Master Area Plan, with the exception of PA-1 ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Runoff Management Plan (ROMP) & Master Plan of Drainage (MPD)		ROMP and MPD Criteria	Prior to approval of the first Master Area Plan, with the exception of Planning Area 1, the applicant shall:	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	See specifics below	Complete Requirements related to items 248-249 below.	PC-Wide (except PA-1)
248	247 and 249 (Cond. 4) 14-29 (MM 4.5-1), 30 (MM 4.5-2) and 247 & 249-250 (PC Text Conds. 4 & 5)	PC Text	Cond. 4.a.	Prior to the approval of the first Master Area Plan, with the exception of PA-1 ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Runoff Management Plan		ROMP Submittal Criteria	a. Prepare a Runoff Management Plan (ROMP) satisfactory to Manager, Flood Control Division and Manager, Watershed and Coastal Resources Division.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	Approved Runoff Management Plan (ROMP)	See guidance above related to Item Nos. 14-15, 19-20, 22-24, 27-28, 65 and 80.	PC-Wide (except PA-1)
249	247-248 (Cond. 4) 14-30 (MM 4.5-1), 247-248 & 250 (PC Text Conds. 4 & 5)	PC Text	Cond. 4.b.	Prior to the approval of the first Master Area Plan, with the exception of PA-1 ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Master Plan of Drainage	Flood control facilities, storm drain features, watersheds	Master Plan of Drainage Submittal Criteria	b. Prepare a Master Plan of Drainage (MPD) satisfactory to Manager, Flood Control Division and Manager, Watershed and Coastal Resources Division showing all flood control and storm drain features within the affected watershed(s).	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	Approved Master Plan of Drainage	See guidance above related to Item No. 30 and previous guidance related to Item Nos. 14 & 15.	PC-Wide (except PA-1)

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250	14-30 (MM 4.5-1), 247-249 (PC Text Conds. 4 & 5)	PC Text	Cond. 5	Prior to recordation of first Final Tract Map, except for financing purposes, within each Planning Area ROMP studies for Planning Areas 3 and 4 will be developed at the level of Tentative Map approvals and prior to rough grade plan approvals.	Runoff Management Plan (ROMP) & Master Plan of Drainage (MPD)	Dedication of acreage	Land Acquisition to Implement ROMP and MPD	Prior to recordation of first Final Tract Map (except for financing purposes) within each Planning Area, the applicant shall set aside all land necessary to implement the ROMP and MPD in a manner satisfactory to Manager Flood Control Division and Manager, Watershed and Coastal Resources Division.	Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	Provide evidence that all land necessary to implement the ROMP and MPD has been set aside	Dedication requirements (in fee or easement) shall be limited to land necessary to implement phasing of all applicable Ranch-wide ROMP and MPD or OCFCD facilities. County of Orange acceptance of improvements as identified by separate agreement.	Each PA
251		PC Text	Cond. 6	Prior to approval of final design of facilities that are to be County or OCFCD operated and maintained	Flood Control	OCFCD, regulatory agency maintenance permit conditions	Flood Control Maintenance Permits	Prior to approval of final design of facilities per Orange County Flood Control District (OCFCD) criteria that are to be County or OCFCD operated and maintained, the applicant shall obtain regulatory agency maintenance permit conditions and receive approval from Manager, Flood Control Division and Manager, Watershed and Coastal Resources Division.	*Manager of OC Flood Control and ~~Manager of Watershed and Coastal Resources~~ **Director, OC Planning,**	Provide evidence that all regulatory agency maintenance permits have been obtained	Pending. Prior to acceptance of any regulatory permit, the draft of all regulatory permit applications as well as any required mitigation shall be provided to OCFCD/County for review and approval to determine if regulatory permit conditions are consistent with OCFCD/County standards and do not contain obligations which are unusual, excessive and cost prohibitive Approval will not be unreasonably withheld.. Procurement of all regulatory permits shall be at no cost to OCFCD/County.	Each applicable PA

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252		PC Text	Cond. 7	Prior to approval of first tentative tract map subdivision within the Ranch Plan PC Area, with the exception of PA-1	Fire Protection	Pro-rata fair share funding, fire protection facilities, fire protection equipment, fire protection personnel	Secured Fire Protection Agreement	Prior to approval of the first subdivision within the Ranch Plan PC Area with the exception of Planning Area 1, the applicant shall enter into a Secured Fire Protection Agreement with the Orange County Fire Authority (OCFA). This agreement shall specify the pro-rata fair share funding of capital improvements necessary to establish adequate fire protection facilities, equipment and/or personnel for the Ranch Plan PC Area. *[Note: OCFA approved two separate Ranch Plan Secured Fire Protection Agreements which were recorded on April 4, 2007; one for Ladera and Ranch Plan Planning Area 1, the other for Ranch Plan Planning Areas 2 through 8.]*	Orange County Fire Authority	Secured Fire Protection Agreement	Secured Fire Protection Agreement to be approved in two increments: PA1 and the remainder of the Planned Community.	PC-Wide (except PA-1)
253	201-202 and 204 (EIR 589, MM 4.15-1 & 4.15-3)	PC Text	Cond. 8	Prior to approval of the first Master Area Plan	Fire Protection	Fuel, modification, adaptive management tools,	Ranch Plan Fire Protection Program	Prior to the approval of the first Master Area Plan, the applicant shall obtain Orange County Fire Authority approval of a Ranch Plan Fire Protection Program, per the requirements of Section II.D hereof, including a Planned Community-wide Fuel Modification Plan. If adaptive management tools (grazing, prescribed fires, etc.) for controlling the growth of vegetation surrounding Ranch Plan development are not successful and vegetation transitions from Fuel Model 2 (FM2) to Fuel Model 4 (FM4), as classified by the BEHAVE Fire Behavior Fuel Modeling System, OCFA may opt to require Fuel Modification zone widths based on the BEHAVE model anticipated flame lengths plus 20-feet for defensible space. **[Note: Ranch Plan Fire Protection Program was approved by Board of Supervisors on July 31, 2007.]**	**Board of Supervisors** ~~Orange County Fire Authority~~	Preparation of a Ranch Plan Fire Protection Program, per requirements of PC Text Section II.D, including a PC-wide Fuel Modification Plan	Approved Fire Protection Program dated July 31, 2007 (Hyperlink #24)	PC-Wide

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254	255-259 (PC Text Cond. 9), 370-375 & 402-407 (EIR 589, PDF 4.1-1 & 4.9-1)	PC Text	Cond. 9	Prior to approval of first Master Area Plan	Open Space		Open Space Agreement	Prior to approval of the first Master Area Plan, the applicant shall enter into an agreement with the County regarding the 15,132-acre RMV Open Space. The agreement shall address: **[Note: Open Space Agreement was approved by the Board of Supervisors.]**	Director, RDMD **Director, OC Public Works**	Preparation and execution of an Open Space Agreement	Approved Open Space Agreement dated July 25, 2006 (Hyperlink #14)	PC-Wide
255	254 & 256-259 (PC Text Cond. 9), 370-375 & 402-407 (EIR 589, PDF 4.1-1 & 4.9-1)	PC Text	Cond. 9.a.	See above	Open Space	Conservation easement	Open Space Preservation	a. Method of preservation for this open space (i.e., conservation easement or similar mechanism)	See above	See above	See Above	PC-Wide
256	254-255 & 257-259 (PC Text Cond. 9), 370-375 & 402-407 (EIR 589, PDF 4.1-1 & 4.9-1)	PC Text	Cond. 9.b.	See above	Open Space		Open Space Agreement Definitions	b. Permitted uses within the Open Space, as defined in Section IV, "Definitions" and as regulated by Section III.I Open Space.	See above	See above	See Above	PC-Wide
257	254-256 & 258-259 (PC Text Cond. 9), 370-375 & 402-407 (EIR 589, PDF 4.1-1 & 4.9-1)	PC Text	Cond. 9.c.	See above	Open Space	Non-permitted uses	Open Space Agreement Prohibited Uses	c. Non-permitted (prohibited) uses as regulated by Section III.I, "Open Space".	See above	See above	See Above	PC-Wide
258	254-257 & 259 (PC Text Cond. 9), 370-375 & 402-407 (EIR 589, PDF 4.1-1 & 4.9-1)	PC Text	Cond. 9.d.	See above	Open Space	Open space preservations areas, development phasing	Open Space Agreement Phasing	d. Phasing of Open Space preservation areas, consistent with development phasing.	See above	See above	See Above	PC-Wide

County of Orange - OC Public Works
OC Development Services
CONDITIONALLY APPROVED
Approved By: Planning Commission
Approval Date: 2025/2015
Permits: PA140072 (PA3 & PA4 Addendum)

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259	254-258 (PC Text Cond. 9), 370-375 & 402-407 (EIR 589, PDF 4.1-1 & 4.9-1)	PC Text	Cond. 9.e.	See above	Open Space	Adaptive Management Program (AMP)	Open Space Project Funding	Planning, design and implementation of the Adaptive Management Program (AMP) as described in Final Program EIR 589.	See above	See above	See Above	PC-Wide
271		DA	Public Benefit 4	Prior to Issuance of Building Permit for 1,000th EDU	Transportation	SCRIP, Avenida Pico	Pico / I-5 Interchange Improvements	Accelerated payment of Owner's Fair Share contribution for Avenida Pico / I-5 interchange improvements	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and City of San Clemente)	Complete Payment of $571,000 into SCRIP	Total Cost Share by RMV of $571,000. This project is fully funded by OCTA/Caltrans. Project's Fair Share assumed to be available for reallocation to other State Highway projects.	PA-1, 2 and 3
272		DA	Public Benefit 5	Prior to Issuance of Building Permit for 1,000th EDU	Transportation	SCRIP, I-5 South Bound Ramps, Oso Parkway	I-5 South Bound Ramps at Oso Parkway	Accelerated payment of Owner's Fair Share contribution for freeway ramp improvements at southbound I-5 / Oso Parkway	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and City of Mission Viejo)	Complete Payment ~~of $4,126,000~~ into SCRIP	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $3,068,000 per the Mission Viejo Settlement Agreement. The I-5 SB Ramps at Oso Parkway improvements are fully funded by OCTA/Caltrans. The Total Project Share is allocated to Mission Viejo Local Improvements.	PA-1, 2 and 3
273	306-308 (DA Public Benefit 21) 315-317 (DA Public Benefit 24)	DA	Public Benefit 6	Prior to Issuance of Building Permit for 1,000th EDU	Transportation	SCRIP, Ortega Highway	Widen Ortega Highway - Antonio Parkway to west of San Juan Creek, including bridge	Accelerated payment of Owner's Fair Share contribution for widening portions of Ortega Highway to 4-lanes within unincorporated County (westerly of Antonio Parkway)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans)	Complete Payment ~~of $6,000,000~~ into SCRIP	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $6,000,000 per the Mission Viejo Settlement Agreement. $1.5 Million Ladera DA Funds. $5 Million Ladera Ranch JCFA/CFD Funds available (No SCRIP Credit) * RMV has invested $5.5 million in	PA-1, 2 and 3

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
											design, pending $2.5 million in construction and County has reimbursed 1.5 million from Ladera DA funds and pending $2.5 million from JCFA funds. Net 4.0 million by RMV for reimbursement.	
274	440 (City of MV Settlement Agreement Item 4.1)	DA	Public Benefit 7	Prior to Issuance of Building Permit for 1,000th EDU	Transportation	SCRIP, Crown Valley Parkway, Marguerite Parkway Analysis	Crown Valley Parkway and Marguerite Parkway	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Crown Valley & Marguerite in Mission Viejo. In addition to OWNERS' Fair Share obligation, OWNERS shall contribute an extra $724,000 toward the cost of accomplishing the intersection improvements described above.	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo)	Complete payment ~~of the aggregate obligation of $894,000~~ into SCRIP	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $1,078,000 per the Mission Viejo Settlement Agreement. $106,000 Credit from letter dated 3/7/06. Pre-Fund Ladera CFD at 1 Million.	PA-1, 2 and 3
275	440 (City of MV Settlement Agreement Item 4.6)	DA	Public Benefit 8	Prior to Issuance of Building Permit for 1,000th EDU	Transportation	SCRIP, Oso Parkway and Felipe	Oso Parkway and Felipe	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Felipe & Oso in Mission Viejo. In addition to OWNERS' Fair Share obligation, OWNERS shall contribute an extra $552,000 toward the cost of accomplishing the intersection improvements described above.	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo)	Complete payment ~~of the aggregate obligation of $876,000~~ into SCRIP	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $1,750,000 per the Mission Viejo Settlement Agreement.	PA-1, 2 and 3
276		DA	Public Benefit 9	Prior to Issuance of Building Permit for 1,000th EDU	Transportation	SCRIP, Flex Funds Part I	Flex Funds Part I: Roadway Improvements	Payment of defined financial contribution to assist in implementation of local and regional transportation improvements (i.e., "Flex Funds Part I")	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Complete Payment of $5,000,000 into SCRIP		PA-1, 2 and 3

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277	278 (DA Public Benefit 10) 440 City of MV Settlement Agreement Item 4.1)	DA	Public Benefit 10	Following Issuance of Building Permit for 1,001st EDU, But Not Later than Issuance of Building Permit for 2,000th EDU	Transportation	SCRIP, I-5, Crown Valley Parkway	I-5 Crown Valley Parkway (ramp improvements for SB off-ramp)	Accelerated payment of Owner's Fair Share obligation for construction of southbound off-ramp improvements at I-5 and Crown Valley Parkway	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and City of Laguna Niguel)	Payment into SCRIP of $160,000	Total Cost Share by RMV of $240,000, paid in phases, per timing column.	PA-1 through 5
278	277 (DA Public Benefit 10) 440 City of MV Settlement Agreement Item 4.1)	DA	Public Benefit 10 (cont.)	Following Issuance of Building Permit for 2,001st EDU, But Not Later than Issuance of Building Permit for 2,500th EDU	Transportation	SCRIP, I-5, Crown Valley Parkway	I-5 Crown Valley Parkway (ramp improvements for SB off-ramp) (cont.)	Accelerated payment of Owner's Fair Share obligation for construction of southbound off-ramp improvements at I-5 and Crown Valley Parkway	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and City of Laguna Niguel)	Payment into SCRIP of $80,000	Total Cost Share by RMV of $240,000, paid in phases, per timing column.	PA-1 through 5
279	280 (DA Public Benefit 11) 443 City of MV Settlement Agreement Item 4.4)	DA	Public Benefit 11	Following Issuance of Building Permit for 1,001st EDU, But Not Later than Issuance of Building Permit for 2,000th EDU	Transportation	SCRIP, Crown Valley Parkway I-5 Bridge Widening	Crown Valley Parkway I-5 Bridge Widening	Accelerated payment of Owner's Fair Share contribution for widening of Crown Valley Parkway Bridge at I-5	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and City of Mission Viejo)	Payment into SCRIP of $73,000	Total Cost Share by RMV of $109,000, paid in phases, per timing column.	PA-1 through 5
280	281 (DA Public Benefit 11) 443 City of MV Settlement Agreement Item 4.4)	DA	Public Benefit 11 (cont.)	Following Issuance of Building Permit for 2,001st EDU, But Not Later than Issuance of Building Permit for 2,500th EDU	Transportation	SCRIP, Crown Valley Parkway I-5 Bridge Widening	Crown Valley Parkway I-5 Bridge Widening (cont.)	Accelerated payment of Owner's Fair Share contribution for widening of Crown Valley Parkway Bridge at I-5	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and City of Mission Viejo)	Payment into SCRIP of $36,000	Total Cost Share by RMV of $109,000, paid in phases, per timing column.	PA-1 through 5

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281	282 (DA Public Benefit 12)	DA	Public Benefit 12	Following Issuance of Building Permit for 1,001st EDU, But Not Later than Issuance of Building Permit for 2,000th EDU	Transportation	SCRIP, I-5/Ortega Interchange	I-5/Ortega Interchange (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of interchange improvements at I-5 and Ortega Highway	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo)	Payment into SCRIP of $9,100,000	Total Cost Share by RMV of $13,600,000. A Ladera CFD obligation prior to SCRIP. Caltrans Support Costs/ Overhead (including design) is not included and is assumed to be the total responsibility of CalTrans as Administrator of State Highway system. (Paid in phases, per timing column)	PA-1 through 5
282	281 (DA Public Benefit 12)	DA	Public Benefit 12 (cont.)	Following Issuance of Building Permit for 2,001st EDU, But Not Later than Issuance of Building Permit for 2,500th EDU	Transportation	SCRIP, I-5/Ortega Interchange	I-5/Ortega Interchange	Accelerated payment of Owner's Fair Share contribution for construction of interchange improvements at I-5 and Ortega Highway	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo)	Payment into SCRIP of $4,500,000	Total Cost Share by RMV of $13,600,000. A Ladera CFD obligation prior to SCRIP. Caltrans Support Costs/ Overhead (including design) is not included and is assumed to be the total responsibility of CalTrans as Administrator of State Highway system. (Paid in phases, per timing column)	PA-1 through 5
283	443 City of MV Settlement Agreement Item 4.4)	DA	Public Benefit 13	Prior to Issuance of Building Permit for 2,500th EDU	Transportation	SCRIP, Flex Funds	Flex Funds for Roadway Improvements (Part II)	Payment of defined financial contribution to assist in implementation of local and regional transportation improvements (i.e., "Flex Funds Part II")	~~Director, RDMD~~ **Director, OC Public Works**	Complete Payment into SCRIP ~~of $5,000,000~~	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $3,000,000 per the Mission Viejo Settlement Agreement.	PA-1 through 5
284	285-287 (DA Public Benefit 14)	DA	Public Benefit 14	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, La Pata Avenue	La Pata Avenue - Phase 1 (two-lane extension from Landfill southerly to Vista Hermosa)	Accelerated financial contribution in excess of Owner's Fair Share obligation, construction of Avenida La Pata extension (Phase I)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all	Payment into SCRIP of $6,000,000	Total Cost Share by RMV of $15,000,000, paid in phases, per timing column.	PA-1 through 7

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
									requirements per City of San Clemente)			
285	284 and 286-287 (DA Public Benefit 14)	DA	Public Benefit 14 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, La Pata Avenue	La Pata Avenue - Phase 1 (two-lane extension from Landfill southerly to Vista Hermosa) (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation, construction of Avenida La Pata extension (Phase I)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $6,000,000	Total Cost Share by RMV of $15,000,000, paid in phases, per timing column.	PA-1 through 7
286	284-285 and 287 (DA Public Benefit 14)	DA	Public Benefit 14 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, La Pata Avenue	La Pata Avenue - Phase 1 (two-lane extension from Landfill southerly to Vista Hermosa) (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation, construction of Avenida La Pata extension (Phase I)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $3,000,000	Total Cost Share by RMV of $15,000,000, per timing column.	PA-1 through 7
287	284-286 (DA Public Benefit 14)	DA	Public Benefit 14 (cont.)	Prior to or concurrent with issuance of the 5001st EDU	Transportation	SCRIP, La Pata Avenue	La Pata Avenue - Phase 1 (two-lane extension from Landfill southerly to Vista Hermosa) (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation, construction of Avenida La Pata extension (Phase I). Based upon approved documentation prepared by the COUNTY for environmental approval, permitting and design of Avenida La Pata, OWNERS shall enter into an agreement with COUNTY to construct Phase 1 of the improvement consistent with the alignment for this road adopted by the Board of Supervisors. Said roadway design and construction shall provide for full grading to accommodate a Primary arterial highway but paved for only two lanes.	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Enter into an agreement with COUNTY to construct Phase 1 of the La Pata extension improvements		PA-1 through 7

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
288	289-290 (DA Public Benefit 15)	DA	Public Benefit 15	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, La Pata/Vista Hermosa Intersection	La Pata/Vista Hermosa Intersection	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at La Pata & Vista Hermosa in San Clemente	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $148,800	Total Cost Share by RMV of $374,000, paid in phases, per timing column.	PA-1 through 7
289	288 and 290 (DA Public Benefit 15)	DA	Public Benefit 15 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, La Pata/Vista Hermosa Intersection	La Pata/Vista Hermosa Intersection (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at La Pata & Vista Hermosa in San Clemente	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $148,800	Total Cost Share by RMV of $374,000, paid in phases, per timing column.	PA-1 through 7
290	289-290 (DA Public Benefit 15)	DA	Public Benefit 15 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, La Pata/Vista Hermosa Intersection	La Pata/Vista Hermosa Intersection (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at La Pata & Vista Hermosa in San Clemente	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $74,400	Total Cost Share by RMV of $374,000, paid in phases, per timing column.	PA-1 through 7
291	292-293 (DA Public Benefit 16)	DA	Public Benefit 16	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, Vera Cruz/Vista Hermosa Intersection	Vera Cruz/Vista Hermosa Intersection	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Vera Cruz & Vista Hermosa in San Clemente	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $374,800	Total Cost Share by RMV of $937,000, paid in phases, per timing column.	PA-1 through 7

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292	291 and 293 (DA Public Benefit 16)	DA	Public Benefit 16 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, Vera Cruz/Vista Hermosa Intersection	Vera Cruz/Vista Hermosa Intersection (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Vera Cruz & Vista Hermosa in San Clemente	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $374,800	Total Cost Share by RMV of $937,000, paid in phases, per timing column.	PA-1 through 7
293	291-292 (DA Public Benefit 16)	DA	Public Benefit 16 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Vera Cruz/Vista Hermosa Intersection	La Pata/Vista Hermosa Intersection (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Vera Cruz & Vista Hermosa in San Clemente	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $187,400	Total Cost Share by RMV of $937,000, paid in phases, per timing column.	PA-1 through 7
294	295-296 (DA Public Benefit 17)	DA	Public Benefit 17	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, Ortega/Rancho Viejo Intersection	Transportation - Ortega/Rancho Viejo Intersection	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Ortega Highway & Rancho Viejo Road in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $149,600	Total Cost Share by RMV of $374,000, paid in phases, per timing column.	PA-1 through 7
295	294 and 296 (DA Public Benefit 17)	DA	Public Benefit 17 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, Ortega/Rancho Viejo Intersection	Transportation - Ortega/Rancho Viejo Intersection (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Ortega Highway & Rancho Viejo Road in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $149,600	Total Cost Share by RMV of $374,000, paid in phases, per timing column.	PA-1 through 7

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296	294-295 (DA Public Benefit 17)	DA	Public Benefit 17 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Ortega/Rancho Viejo Intersection	Transportation Ortega/Rancho Viejo Intersection (cont.)	**Transportation Ortega/Rancho Viejo Intersection (continued): Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Ortega Highway & Rancho Viejo Road in San Juan Capistrano**	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $74,800	Total Cost Share by RMV of $374,000, paid in phases, per timing column.	PA-1 through 7
297	298-299 (DA Public Benefit 18)	DA	Public Benefit 18	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, Ortega/La Novia Intersection	Ortega/La Novia Intersection	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Ortega Highway & La Novia in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $99,200	Total Cost Share by RMV of $248,000, paid in phases, per timing column.	PA-1 through 7
298	297 and 299 (DA Public Benefit 18)	DA	Public Benefit 18 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, Ortega/La Novia Intersection	Ortega/La Novia Intersection (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Ortega Highway & La Novia in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $99,200	Total Cost Share by RMV of $248,000, paid in phases, per timing column.	PA-1 through 7
299	297-298 (DA Public Benefit 18)	DA	Public Benefit 18 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Ortega/La Novia Intersection	Ortega/La Novia Intersection (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Ortega Highway & La Novia in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of	Payment into SCRIP of $49,600	Total Cost Share by RMV of $248,000, paid in phases, per timing column.	PA-1 through 7

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									San Juan Capistrano)			
300		DA	Public Benefit 19	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, Camino Capistrano/Del Obispo Intersection	Camino Capistrano/Del Obispo Intersection	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Camino Capistrano & Del Obispo in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $21,600	Total Cost Share by RMV of $54,000, paid in phases, per timing column.	PA-1 through 7
301		DA	Public Benefit 19 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, Camino Capistrano/Del Obispo Intersection	Camino Capistrano/Del Obispo Intersection (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Camino Capistrano & Del Obispo in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $21,600	Total Cost Share by RMV of $54,000, paid in phases, per timing column.	PA-1 through 7
302		DA	Public Benefit 19 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Camino Capistrano/Del Obispo Intersection	Camino Capistrano/Del Obispo Intersection (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at Camino Capistrano & Del Obispo in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $10,800	Total Cost Share by RMV of $54,000, paid in phases, per timing column.	PA-1 through 7

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303		DA	Public Benefit 20	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, San Juan Creek/Valle Intersection	San Juan Creek/Valle Intersection	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at San Juan Creek Road & Valle Road in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $120,000	Total Cost Share by RMV of $300,000, paid in phases, per timing column.	PA-1 through 7
304		DA	Public Benefit 20 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, San Juan Creek/Valle Intersection	San Juan Creek/Valle Intersection (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at San Juan Creek Road & Valle Road in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $120,000	Total Cost Share by RMV of $300,000, paid in phases, per timing column.	PA-1 through 7
305		DA	Public Benefit 20 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, San Juan Creek/Valle Intersection	San Juan Creek/Valle Intersection (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of intersection improvements at San Juan Creek Road & Valle Road in San Juan Capistrano	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $60,000	Total Cost Share by RMV of $300,000, paid in phases, per timing column.	PA-1 through 7

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
306	273 and 315-317	DA	Public Benefit 21	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, Ortega Highway	Ortega Highway 4-Lane Widening (Context Sensitive Design) in San Juan Capistrano	Accelerated payment of Owner's Fair Share contribution for widening portions of Ortega Highway to 4-lanes within San Juan Capistrano (easterly of Avenida La Novia [context sensitive design])	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP ~~of $1,600,000~~	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $4,000,000 per the Mission Viejo Settlement Agreement. (SCRIP Credit to be given for design)	PA-1 through 7
307	273 (DA Public Benefit 6) and 315-317 (DA Public Benefit 24)	DA	Public Benefit 21 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, Ortega Highway	Ortega Highway 4-Lane Widening (Context Sensitive Design) in San Juan Capistrano (cont.)	Accelerated payment of Owner's Fair Share contribution for widening portions of Ortega Highway to 4-lanes within San Juan Capistrano (easterly of Avenida La Novia [context sensitive design])	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP ~~of $160,000~~	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $4,000,000 per the Mission Viejo Settlement Agreement. (SCRIP Credit to be given for design)	PA-1 through 7
308	273 (DA Public Benefit 6) and 315-317 (DA Public Benefit 24)	DA	Public Benefit 21 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Ortega Highway	Ortega Highway 4-Lane Widening (Context Sensitive Design) in San Juan Capistrano (cont.)	Accelerated payment of Owner's Fair Share contribution for widening portions of Ortega Highway to 4-lanes within San Juan Capistrano (easterly of Avenida La Novia [context sensitive design])	~~Director, RDMD~~ **Director, OC Public Works**	Payment into SCRIP ~~of $80,000~~	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $4,000,000 per the Mission Viejo Settlement Agreement. (SCRIP Credit to be given for design)	PA-1 through 7
309		DA	Public Benefit 22	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, Antonio/Oso Intersection	Antonio/Oso Intersection	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Oso Parkway in the County of Orange	~~Director, RDMD~~ **Director, OC Public Works**	Payment into SCRIP of $539,600	Total Cost Share by RMV of $1,349,000, paid in phases, per timing column. (Portion to be paid by Ladera Ranch Community Facilities District)	PA-1 through 7

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
310		DA	Public Benefit 22 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, Antonio/Oso Intersection	Antonio/Oso Intersection (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Oso Parkway in the County of Orange	~~Director,~~ RDMD **Director, OC Public Works**	Payment into SCRIP of $539,600	Total Cost Share by RMV of $1,349,000, paid in phases, per timing column. (Portion to be paid by Ladera Ranch Community Facilities District)	PA-1 through 7
311		DA	Public Benefit 22 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Antonio/Oso Intersection	Antonio/Oso Intersection (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Oso Parkway in the County of Orange	~~Director,~~ RDMD **Director, OC Public Works**	Payment into SCRIP of $269,800	Total Cost Share by RMV of $1,349,000, paid in phases, per timing column. (Portion to be paid by Ladera Ranch Community Facilities District)	PA-1 through 7
312		DA	Public Benefit 23	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, Antonio/Crown Valley Intersection	Antonio/Crown Valley Intersection	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Crown Valley Parkway in the County of Orange	~~Director,~~ RDMD **Director, OC Public Works**	Payment into SCRIP of $122,000	Total Cost Share by RMV of $305,000, paid in phases, per timing column.	PA-1 through 7
313		DA	Public Benefit 23 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, Antonio/Crown Valley Intersection	Antonio/Crown Valley Intersection (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Crown Valley Parkway in the County of Orange	~~Director,~~ RDMD **Director, OC Public Works**	Payment into SCRIP of $122,000	Total Cost Share by RMV of $305,000, paid in phases, per timing column.	PA-1 through 7
314		DA	Public Benefit 23 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Antonio/Crown Valley Intersection	Antonio/Crown Valley Intersection (cont.)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Crown Valley Parkway in the County of Orange	~~Director,~~ RDMD **Director, OC Public Works**	Payment into SCRIP of $61,000	Total Cost Share by RMV of $305,000, paid in phases, per timing column.	PA-1 through 7

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
315	273 (DA Public Benefit 6) and 306-308(DA Public Benefit 21)	DA	Public Benefit 24	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, Antonio/Ortega Intersection	Antonio/Ortega Intersection:	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Ortega Highway in the County of Orange	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans)	Payment into SCRIP of $168,000	Total Cost Share by RMV of $420,000, paid in phases, per timing column. (Cost increases anticipated) $400,000 may be available from CUSD. Credit to be given when construction contract is awarded.	PA-1 through 7
316	273 (DA Public Benefit 6) and 306-308(DA Public Benefit 21)	DA	Public Benefit 24 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, Antonio/Ortega Intersection	Antonio/Ortega Intersection (continued):	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Ortega Highway in the County of Orange	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans)	Payment into SCRIP of $168,000	Total Cost Share by RMV of $420,000, paid in phases, per timing column. (Cost increases anticipated) $400,000 may be available from CUSD. Credit to be given when construction contract is awarded.	PA-1 through 7
317	273 (DA Public Benefit 6) and 306-308(DA Public Benefit 21)	DA	Public Benefit 24 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Antonio/Ortega Intersection	Antonio/Ortega Intersection (continued):	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of intersection improvements at Antonio Parkway & Ortega Highway in the County of Orange	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans)	Payment into SCRIP of $84,000	Total Cost Share by RMV of $420,000, paid in phases, per timing column. (Cost increases anticipated) $400,000 may be available from CUSD. Credit to be given when construction contract is awarded.	PA-1 through 7

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
318		DA	Public Benefit 25	Following Issuance of Building Permit for 2,501st EDU, But Not Later than Issuance of Building Permit for 3,500th EDU	Transportation	SCRIP, I-5/Avery Parkway Interchange	I-5/Avery Parkway Interchange	Accelerated payment of Owner's Fair Share contribution for construction of interchange improvements at I-5 and Avery Parkway	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the cities of Laguna Niguel and Mission Viejo)	Payment into SCRIP of $60,800	Total Cost Share by RMV of $152,000, paid in phases, per timing column.	PA-1 through 7
319		DA	Public Benefit 25 (cont.)	Following Issuance of Building Permit for 3,501st EDU, But Not Later than Issuance of Building Permit for 4,500th EDU	Transportation	SCRIP, I-5/Avery Parkway Interchange	I-5/Avery Parkway Interchange (continued)	Accelerated payment of Owner's Fair Share contribution for construction of interchange improvements at I-5 and Avery Parkway	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the cities of Laguna Niguel and Mission Viejo)	Payment into SCRIP of $60,800	Total Cost Share by RMV of $152,000, paid in phases, per timing column.	PA-1 through 7
320		DA	Public Benefit 25 (cont.)	Following Issuance of Building Permit for 4,501st EDU, But Not Later than Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, I-5/Avery Parkway Interchange	I-5/Avery Parkway Interchange (continued)	Accelerated payment of Owner's Fair Share contribution for construction of interchange improvements at I-5 and Avery Parkway	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the cities of Laguna Niguel and Mission Viejo)	Payment into SCRIP of $30,400	Total Cost Share by RMV of $152,000, paid in phases, per timing column.	PA-1 through 7

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321		DA	Public Benefit 26	**Following Issuance of Building Permit for 5,001st EDU, But Not Later than Issuance of Building Permit for 7,500th EDU** (Revised per the Mission Viejo Settlement Agreement)	Transportation	SCRIP, Park and Ride Facility t	Allocate funds previously identified for Park and Ride Facility to the Oso/Antonio Parkway Mission Viejo Local Improvements	Payment of Owner's Fair Share contribution for Park & Ride facility. OWNERS shall dedicate a 2.0 AC+/- parcel of land (the "P&R Parcel") that may be used for the development, construction and operation of the desired Park & Ride facility.	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo)	OWNERS shall prepare and deliver to COUNTY an offer of dedication relative to the P&R Parcel. The offer of dedication shall be irrevocable.	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $600,000 to be provided, per the Mission Viejo Settlement Agreement.	PA-1 through 7
322		DA	Public Benefit 27	Prior to Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP	Fund Preliminary Designs, Environmental Studies for Priority 2 Projects (25% of Administration/ Contingency Amount)	Payment of defined financial contribution to offset costs incurred in the preparation of preliminary designs and environmental studies for traffic improvement projects (Part II)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per all applicable agencies)	Payment into SCRIP of $4,880,000		PA-1 through 7
323		DA	Public Benefit 28	Prior to Issuance of Building Permit for 5,000th EDU	Transportation	SCRIP, Flex Funds Part III	Flex Funds for Roadway Projects (Part III)	Payment of defined financial contribution to assist in implementation of local and regional transportation improvements (i.e., "Flex Funds Part III")	~~Director, RDMD~~ **Director, OC Public Works**	Payment into SCRIP ~~of $6,000,000~~	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $3,222,000 to be provided, per the Mission Viejo Settlement Agreement.	PA-1 through 7
324		DA	Public Benefit 29	Following Issuance of Building Permit for 5,001st EDU, But Not Later than Issuance of Building Permit for 6,000th EDU	Transportation	SCRIP, Saddleback I-5 Connectors	Re-Allocate funds previously identified for Saddleback I-5 Connectors for Regional Improvements Benefiting Mission Viejo	Accelerated payment of Owner's Fair Share contribution for construction of Saddleback College / I-5 connector ramps in Mission Viejo	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of Mission Viejo)	Payment into SCRIP of 40% ~~$2,800,000~~	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $4,348,000 to be provided, per the Mission Viejo Settlement Agreement, paid in phases, per timing column.	PA-1 through 9

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
325		DA	Public Benefit 29 (cont.)	Following Issuance of Building Permit for 6,001st EDU, But Not Later than Issuance of Building Permit for 7,000th EDU	Transportation	SCRIP, Saddleback I-5 Connectors	Re-Allocate funds previously identified for Saddleback I-5 Connectors for Regional Improvements Benefiting Mission Viejo (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of Saddleback College / I-5 connector ramps in Mission Viejo	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of Mission Viejo)	Payment into SCRIP of 40% ~~$2,800,000~~	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $4,348,000 to be provided, per the Mission Viejo Settlement Agreement, paid in phases, per timing column.	PA-1 through 9
326		DA	Public Benefit 29 (cont.)	Following Issuance of Building Permit for 7,001st EDU, But Not Later than Issuance of Building Permit for 7,500th EDU	Transportation	SCRIP, Saddleback I-5 Connectors	Re-Allocate funds previously identified for Saddleback I-5 Connectors for Regional Improvements Benefiting Mission Viejo (cont.)	Accelerated payment of Owner's Fair Share contribution for construction of Saddleback College / I-5 connector ramps in Mission Viejo	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of Mission Viejo)	Payment into SCRIP of 20% ~~$1,400,000~~	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $4,348,000 to be provided, per the Mission Viejo Settlement Agreement, paid in phases, per timing column.	PA-1 through 9
327		DA	Public Benefit 30	Following Issuance of Building Permit for 5,001st EDU, But Not Later than Issuance of Building Permit for 6,000th EDU	Transportation	SCRIP, Cow Camp Road	Extend Cow Camp Road easterly to existing Ortega	Accelerated payment of Owner's Fair Share contribution for extension of Cow Camp Road (easterly to Ortega Highway)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per the Transportation Corridor Agencies)	Payment into SCRIP of $12,864,000	Total Cost Share by RMV of $32,160,000, paid in phases, per timing column. RMV has funded $2 million (soon to be more) for design, for eventual reimbursement or SCRIP credit.	PA-1 through 9
328		DA	Public Benefit 30 (cont.)	Following Issuance of Building Permit for 6,001st EDU, But Not Later than Issuance of Building Permit for 7,000th EDU	Transportation	SCRIP, Cow Camp Road	Extend Cow Camp Road easterly to existing Ortega (continued)	Accelerated payment of Owner's Fair Share contribution for extension of Cow Camp Road (easterly to Ortega Highway)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per the Transportation Corridor Agencies)	Payment into SCRIP of $12,864,000	Total Cost Share by RMV of $32,160,000, paid in phases, per timing column. RMV has funded $2 million (soon to be more) for design, for eventual reimbursement or SCRIP credit.	PA-1 through 9

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
329		DA	Public Benefit 30 (cont.)	Following Issuance of Building Permit for 7,001st EDU, But Not Later than Issuance of Building Permit for 7,500th EDU	Transportation	SCRIP, Cow Camp Road	Extend Cow Camp Road easterly to existing Ortega (continued):	Applicant's pro rata Co Owner's Fair Share contribution for extension of Cow Camp Road (easterly to Ortega Highway)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all Agreements per the Transportation Corridor Agencies)	Payment into SCRIP of $6,432,000	Total Cost Share by RMV of $32,160,000, paid in phases, per timing column. RMV has funded $2 million (soon to be more) for design, for eventual reimbursement or SCRIP credit.	PA-1 through 9
331		DA	Public Benefit 31 (cont.)	Following Issuance of Building Permit for 5,001st EDU, But Not Later than Issuance of Building Permit for 6,000th EDU	Transportation	SCRIP, Antonio Parkway Widening	Antonio Parkway Widening (continued):	Offer of dedication for right of way, accelerated payment of Owners' Fair Share obligation, and design and construction of improvements to widen portions of Antonio Parkway within the County of Orange	~~Director, RDMD~~ **Director, OC Public Works**	Payment into SCRIP of $2,948,000	Total Cost Share by RMV of $7,370,000, paid in phases, per timing column. RMV has funded $600,000 for design, soon to increase to $2.8 million for eventual reimbursement or SCRIP credit. Credit provided when construction contract is awarded.	PA-1 through 9
332		DA	Public Benefit 31 (cont.)	Following Issuance of Building Permit for 6,001st EDU, But Not Later than Issuance of Building Permit for 7,000th EDU	Transportation	SCRIP, Antonio Parkway Widening	Antonio Parkway Widening (continued):	Offer of dedication for right of way, accelerated payment of Owners' Fair Share obligation, and design and construction of improvements to widen portions of Antonio Parkway within the County of Orange	~~Director, RDMD~~ **Director, OC Public Works**	Payment into SCRIP of $2,948,000	Total Cost Share by RMV of $7,370,000, paid in phases, per timing column. Credit provided when construction contract is awarded.	PA-1 through 9
333		DA	Public Benefit 31 (cont.)	Following Issuance of Building Permit for 7,001st EDU, But Not Later than Issuance of Building Permit for 7,500th EDU	Transportation	SCRIP, Antonio Parkway Widening	Antonio Parkway Widening (continued):	Offer of dedication for right of way, accelerated payment of Owners' Fair Share obligation, and design and construction of improvements to widen portions of Antonio Parkway within the County of Orange	~~Director, RDMD~~ **Director, OC Public Works**	Payment into SCRIP of $1,474,000	Total Cost Share by RMV of $7,370,000, paid in phases, per timing column. Credit provided when construction contract is awarded.	PA-1 through 9

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334		DA	Public Benefit 32	Following Issuance of Building Permit for 5,001st EDU, But Not Later than Issuance of Building Permit for 6,000th EDU	Transportation	SCRIP, Crown Valley/Cabot Intersection	Crown Valley/Cabot Intersection	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction intersection improvements at Crown Valley Parkway & Cabot Road in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $390,800	Total Cost Share by RMV of $977,000, paid in phases, per timing column.	PA-1 through 9
335		DA	Public Benefit 32 (cont.)	Following Issuance of Building Permit for 6,001st EDU, But Not Later than Issuance of Building Permit for 7,000th EDU	Transportation	SCRIP, Crown Valley/Cabot Intersection	Crown Valley/Cabot Intersection (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction intersection improvements at Crown Valley Parkway & Cabot Road in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $390,800	Total Cost Share by RMV of $977,000, paid in phases, per timing column.	PA-1 through 9
336		DA	Public Benefit 32 (cont.)	Following Issuance of Building Permit for 7,001st EDU, But Not Later than Issuance of Building Permit for 7,500th EDU	Transportation	SCRIP, Crown Valley/Cabot Intersection	Crown Valley/Cabot Intersection (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction intersection improvements at Crown Valley Parkway & Cabot Road in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $195,400	Total Cost Share by RMV of $977,000, paid in phases, per timing column.	PA-1 through 9
337		DA	Public Benefit 33	Following Issuance of Building Permit for 5,001st EDU, But Not Later than Issuance of Building Permit for 6,000th EDU	Transportation	SCRIP, Crown Valley/Forbes Intersection	Crown Valley/Forbes Intersection	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction intersection improvements at Crown Valley Parkway & Forbes Road in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $270,400	Total Cost Share by RMV of $676,000, paid in phases, per timing column.	PA-1 through 9

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338		DA	Public Benefit 33 (cont.)	Following Issuance of Building Permit for 6,001st EDU, But Not Later than Issuance of Building Permit for 7,000th EDU	Transportation	SCRIP, Crown Valley/Forbes Intersection	Crown Valley/Forbes Intersection (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction intersection improvements at Crown Valley Parkway & Forbes Road in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $270,400	Total Cost Share by RMV of $676,000, paid in phases, per timing column.	PA-1 through 9
339		DA	Public Benefit 33 (cont.)	Following Issuance of Building Permit for 7,001st EDU, But Not Later than Issuance of Building Permit for 7,500th EDU	Transportation	SCRIP, Crown Valley/Forbes Intersection	Crown Valley/Forbes Intersection (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction intersection improvements at Crown Valley Parkway & Forbes Road in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $135,200	Total Cost Share by RMV of $676,000, paid in phases, per timing column.	PA-1 through 9
340		DA	Public Benefit 34	Following Issuance of Building Permit for 5,001st EDU, But Not Later than Issuance of Building Permit for 6,000th EDU	Transportation	SCRIP, Crown Valley Parkway Railroad Bridge	Widen Railroad Bridge along Crown Valley Parkway	Accelerated financial contribution in excess of Owner's Fair Share obligation for widening of Railroad Bridge along Crown Valley Parkway in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $291,200	Total Cost Share by RMV of $728,000, paid in phases, per timing column.	PA-1 through 9
341		DA	Public Benefit 34 (cont.)	Following Issuance of Building Permit for 6,001st EDU, But Not Later than Issuance of Building Permit for 7,000th EDU	Transportation	SCRIP, Crown Valley Parkway Railroad Bridge	Widen Railroad Bridge along Crown Valley Parkway (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for widening of Railroad Bridge along Crown Valley Parkway in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $291,200	Total Cost Share by RMV of $728,000, paid in phases, per timing column.	PA-1 through 9

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342		DA	Public Benefit 34 (cont.)	Following Issuance of Building Permit for 7,001st EDU, But Not Later than Issuance of Building Permit for 7,500th EDU	Transportation	SCRIP, Crown Valley Parkway Railroad Bridge	Widening Railroad Bridge along Crown Valley Parkway (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for widening of Railroad Bridge along Crown Valley Parkway in the City of Laguna Niguel	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Laguna Niguel)	Payment into SCRIP of $145,600	Total Cost Share by RMV of $728,000, paid in phases, per timing column.	PA-1 through 9
343		DA	Public Benefit 35	Following Issuance of Building Permit for 5,001st EDU, But Not Later than Issuance of Building Permit for 6,000th EDU	Transportation	SCRIP, Oso Parkway Widening	Oso Parkway Widening West	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of Oso Parkway widening in Mission Viejo (Marguerite to I-5)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo)	Payment into SCRIP ~~of $1,890,400~~	No additional funds required by Items No. 343-345 (Oso Parkway Widening) covered by Mission Viejo Settlement Agreement. Revised SCRIP Table 4 lists an aggregate RMV share of $13,274,000 for all City of Mission Viejo Local Improvements, as set forth in the Mission Viejo Settlement Agreement.	PA-1 through 9
344		DA	Public Benefit 35 (cont.)	Following Issuance of Building Permit for 6,001st EDU, But Not Later than Issuance of Building Permit for 7,000th EDU	Transportation	SCRIP, Oso Parkway Widening	Oso Parkway Widening West (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of Oso Parkway widening in Mission Viejo (Marguerite to I-5)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo)	Payment into SCRIP ~~of $1,890,400~~	No additional funds required by Items No. 343-345 (Oso Parkway Widening) covered by Mission Viejo Settlement Agreement. Revised SCRIP Table 4 lists an aggregate RMV share of $13,274,000 for all City of Mission Viejo Local Improvements, as set forth in the Mission Viejo Settlement Agreement.	PA-1 through 9

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
345		DA	Public Benefit 35 (cont.)	Following Issuance of Building Permit for 7,001st EDU, But Not Later than Issuance of Building Permit for 7,500th EDU	Transportation	SCRIP, Oso Parkway Widening	Oso Parkway Widening West (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of Oso Parkway widening in Mission Viejo (Marguerite to I-5)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo)	Payment into SCRIP ~~of $945,200~~	No additional funds required by Items No. 343-345 (Oso Parkway Widening) covered by Mission Viejo Settlement Agreement. Revised SCRIP Table 4 lists an aggregate RMV share of $13,274,000 for all City of Mission Viejo Local Improvements, as set forth in the Mission Viejo Settlement Agreement.	PA-1 through 9
346		DA	Public Benefit 36	Following Issuance of Building Permit for 7,501st EDU, But Not Later than Issuance of Building Permit for 8,500th EDU	Transportation	SCRIP, Avenida La Pata	Avenida La Pata Extension Phase II	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of Avenida La Pata extension (Phase II)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $4,000,000	Total Cost Share by RMV of $10,000,000, paid in phases, per timing column.	PA-1 through 9
347		DA	Public Benefit 36 (cont.)	Following Issuance of Building Permit for 8,501st EDU, But Not Later than Issuance of Building Permit for 9,500th EDU	Transportation	SCRIP, Avenida La Pata	Avenida La Pata Extension Phase II (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of Avenida La Pata extension (Phase II)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $4,000,000	Total Cost Share by RMV of $10,000,000, paid in phases, per timing column.	PA-1 through 9

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348		DA	Public Benefit 36 (cont.)	Following Issuance of Building Permit for 9,501st EDU, But Not Later than Issuance of Building Permit for 10,000th EDU	Transportation	SCRIP, Avenida La Pata	Avenida La Pata Extension Phase II (continued)	Accelerated financial contribution in excess of Owner's Fair Share obligation for construction of Avenida La Pata extension (Phase II)	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per City of San Clemente)	Payment into SCRIP of $2,000,000	Total Cost Share by RMV of $10,000,000, paid in phases, per timing column.	PA-1 through 9
349		DA	Public Benefit 37	Following Issuance of Building Permit for 7,501st EDU, But Not Later than Issuance of Building Permit for 8,500th EDU	Transportation	SCRIP, Junipero Serra at I-5 Interchange	Road Improvements to Junipero Serra at I-5 Interchange	Accelerated payment of Owner's Fair Share obligation for construction of lane improvements at Junipero Serra and I-5	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $64,000	Total Cost Share by RMV of $160,000, paid in phases, per timing column.	PA-1 through 9
350		DA	Public Benefit 37 (cont.)	Following Issuance of Building Permit for 8,501st EDU, But Not Later than Issuance of Building Permit for 9,500th EDU	Transportation	SCRIP, Junipero Serra at I-5 Interchange	Road Improvements to Junipero Serra at I-5 Interchange (continued):	Accelerated payment of Owner's Fair Share obligation for construction of lane improvements at Junipero Serra and I-5	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $64,000	Total Cost Share by RMV of $160,000, paid in phases, per timing column.	PA-1 through 9
351		DA	Public Benefit 37 (cont.)	Following Issuance of Building Permit for 9,501st EDU, But Not Later than Issuance of Building Permit for 10,000th EDU	Transportation	SCRIP, Junipero Serra at I-5 Interchange	Road Improvements to Junipero Serra at I-5 Interchange (continued):	Accelerated payment of Owner's Fair Share obligation for construction of lane improvements at Junipero Serra and I-5	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per CalTrans and the City of San Juan Capistrano)	Payment into SCRIP of $32,000	Total Cost Share by RMV of $160,000, paid in phases, per timing column.	PA-1 through 9

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352		DA	Public Benefit 38	Following Issuance of Building Permit for 7,501st EDU, But Not Later than Issuance of Building Permit for 8,500th EDU	Transportation	SCRIP, SR-241 at Antonio Parkway	Ramp Improvements to SR-241 at Antonio Parkway	Accelerated payment of Owner's Fair Share obligation for construction of SR-241 ramp improvements	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per Transportation Corridor Agencies)	Payment into SCRIP of $400	Total Cost Share by RMV of $1,000, paid in phases, per timing column.	PA-1 through 9
353		DA	Public Benefit 38 (cont.)	Following Issuance of Building Permit for 8,501st EDU, But Not Later than Issuance of Building Permit for 9,500th EDU	Transportation	SCRIP, SR-241 at Antonio Parkway	Ramp Improvements to SR-241 at Antonio Parkway (continued):	Accelerated payment of Owner's Fair Share obligation for construction of SR-241 ramp improvements	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per Transportation Corridor Agencies)	Payment into SCRIP of $400	Total Cost Share by RMV of $1,000, paid in phases, per timing column.	PA-1 through 9
354		DA	Public Benefit 38 (cont.)	Following Issuance of Building Permit for 9,501st EDU, But Not Later than Issuance of Building Permit for 10,000th EDU	Transportation	SCRIP, SR-241 at Antonio Parkway	Ramp Improvements to SR-241 at Antonio Parkway (continued):	Accelerated payment of Owner's Fair Share obligation for construction of SR-241 ramp improvements	~~Director, RDMD~~ **Director, OC Public Works** (SCRIP Administrator to confirm RMV satisfaction of all requirements per Transportation Corridor Agencies)	Payment into SCRIP of $200	Total Cost Share by RMV of $1,000, paid in phases, per timing column.	PA-1 through 9

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355		DA	Public Benefit 39	Prior to issuance of a permit for the first EDU for the Project area exclusive of (i) any permits issued for activities in Planning Area 1 and (ii) any permits issued for the construction of model homes.	Water Resources	Flood control facilities, basin improvements, SMWD, Flood Management Program	Gobernadora Water Quality Basin Design	Initial planning report and design plans for the facility indicate 25 ac-ft basin, in combination with potential future flood control facilities, will require approximately 35 acres of land to achieve full performance. Contribution of the land and implementation of the basin improvements will commence not later than the issuance of a permit for the first EDU for the Project area exclusive of (i) any permits issued for activities in Planning Area 1 and (ii) any permits issued for the construction of model homes. Furthermore, OWNERS shall, in conjunction with Santa Margarita Water District and/or other partners, design and implement the water quality basin improvements in a manner that considers future flood control benefits that would result from a multi-purpose basin. Any and all facility design and implementation expenses incurred by OWNERS hereunder shall be in addition to any expenses that OWNERS will incur in implementing their Flood Management Program.	~~Director, RDMD~~ **Director, OC Public Works**	Contribution of the land and implementation of the basin improvements.		PA-2 and/or 3
356		DA	Public Benefit 39 (cont.)	Prior to 500th EDU for the Project area exclusive of (i) any permits issued for activities in Planning Area 1 and (ii) any permits issued for the construction of model homes.	Water Resources	Basin improvements	Gobernadora Water Quality Basin Improvements	The basin improvements shall be completed not later than the issuance of a permit for the 500th EDU for the Project area EXCLUSIVE OF (i) any permits issued for activities in Planning Area 1 and (ii) any permits issued for the construction of model homes.	~~Director, RDMD~~ **Director, OC Public Works**	Completion of basin improvements		PA-2 and/or 3

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358		DA	Public Benefit 41	Prior to issuance of a precise grading permit for the first residential unit, or County's completion of all necessary trail connections/ improvements within the Thomas F. Riley Wilderness Park and Coto de Caza, whichever occurs last	Trails	Trail X	Trail X Connection Between Riley Wilderness Park and Caspers Wilderness Park	OWNERS shall grant and convey to COUNTY an easement within the area approximately identified in the attached Exhibit D-1 as "Trail X" for the improvement and maintenance of a regional riding and hiking trail. As depicted, the Trail X Easement shall provide a physical connection between the existing Wagon Wheel Trail extending from General Thomas F. Riley Wilderness Park (located at the southern end of the Coto de Caza community) and the Ridge Top Trail located within Caspers Wilderness Park. The Trail X Easement shall be located upon existing RMV roads in an area easterly of Gobernadora Creek.	~~Director, RDMD~~ **Director, OC Public Works**	Irrevocable Offer of Dedication of a Regional Trail Easement		PA-2, 3 and 10
359		DA	Public Benefit 41 (cont.)	Prior to issuance of a precise grading permit for the first residential unit, or County's completion of all necessary trail connections/ improvements within the Thomas F. Riley Wilderness Park and Coto de Caza, whichever occurs last	Trails	Trail X	Trail X Connection Between Riley Wilderness Park and Caspers Wilderness Park (cont.)	OWNERS shall not be obligated to improve the Trail X Easement beyond its current state prior to dedication. OWNERS shall prepare and submit to COUNTY a written offer of dedication for the Trail X Easement upon the latter to occur of (i) COUNTY's issuance of a precise grading permit for the first residential unit to be developed within the Project Area or (ii) COUNTY's completion of all necessary trail connections/improvements within the Thomas F. Riley Wilderness Park and Coto de Caza that will allow public utilization of the Trail X Easement. Should the aforesaid connections/improvements remain incomplete at the time that OWNERS are prepared to seek issuance of the first (or any subsequent) residential grading permit for the Ranch Plan project, COUNTY shall not withhold issuance of the requested grading permit(s) pending	~~Director, RDMD~~ **Director, OC Public Works**	Irrevocable Offer of Dedication of a Regional Trail Easement		PA-2, 3 and 10

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								delivery of the aforesaid offer of dedication.				
360		DA	Public Benefit 41 (cont.)	Prior to issuance of a precise grading permit for the first residential unit, or County's completion of all necessary trail connections/ improvements within the Thomas F. Riley Wilderness Park and Coto de Caza, whichever occurs last	Trails	Trail X	Trail X Connection Between Riley Wilderness Park and Caspers Wilderness Park (cont.)	Upon COUNTY's completion of the aforesaid connections/improvements (i.e., following prior issuance of any precise residential grading permits for the Ranch Plan project), COUNTY shall notify OWNERS concerning said completion and OWNERS shall thereafter tender the written offer of dedication to COUNTY.	~~Director, RDMD~~, **Director, OC Public Works**	Irrevocable Offer of Dedication of a Regional Trail Easement		PA-2, 3 and 10
363	177 (EIR 589, MM 4.12-1) 420 (EIR 589, PDF 4.12-4)	DA	Public Benefit 43	Implementation in Accordance with Terms and Conditions Set Forth in Supplemental Agreement	Trails	Trail Z	Trail Z Connection Between Wagon Wheel Community Connector Trail and San Juan Creek Class I Bikeway	OWNERS (Applicant) shall design and implement a community trail connection between Coto de Caza and the proposed Wagon Wheel Community Connector Trail (see Section III.A, above) and the proposed San Juan Creek Class I Bikeway. As further depicted, Trail Z shall be located upon existing RMV ranch roads in an area easterly of Gobernadora Creek; Trail Z shall not be improved beyond its current ranch road condition. Trail Z shall be maintained by OWNERS (Applicant) until such time as the underlying property (and all maintenance obligations pertaining thereto) are transferred to a master area association or similar property owners association. The implementation schedule for Trail Z shall be the subject of a supplemental agreement between OWNERS (Applicant) and the Director, RDMD, in consultation with the Director, HB&P.	Director, RDMD, in consultation with the ~~Director, HB&P~~ **Director, OC Planning**	Implementation in Accordance with Terms and Conditions Set Forth in Supplemental Agreement	Trail and Bikeways Implementation Plan for the Ranch Plan [Hyperlink #21], approved 7/18/06, addresses these routes. It is important to note that these community trails are not County Bikeways or Regional Riding and Hiking Trails.	PA-3 and 10

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364		DA	Public Benefit 44	Within 12 months following COUNTY's adoption of an ordinance approving this Development Agreement	Affordable Housing	Affordable rental housing projects	Affordable Housing Land Dedication Provision	c. Concurrent with the execution of this agreement with COUNTY concerning the provision of one or more sites that may be used by COUNTY for the development of affordable rental housing projects.	~~Director, RDMD~~, **Director, OC Public Works**	Complete: OWNER shall enter into an agreement with COUNTY concerning the provision of one or more sites that may be used by COUNTY for the development of affordable rental housing projects	Affordable Housing Agreement Adopted 7/31/06 [Hyperlink #44]	PC-Wide
365		DA	Public Benefit 44 (cont.)	Concurrent with Preparation of Master Area Plans for Individual Planning Areas (as appropriate)	Affordable Housing	Dedicated land	Affordable Housing Land Dedication	a. For each Master Area Plan prepared, OWNERS shall identify the amount of Dedicated Land (if any) located within the relevant Planning Area that will be available for conveyance to COUNTY pursuant to the terms of the Land Agreement. Upon preparing a Master Area Plan and identifying the Dedicated Land acreage located within the relevant Planning Area, OWNERS shall provide written notice to COUNTY concerning (i) the location of the Dedicated Land acreage, (ii) the size of the Dedicated Land acreage, and (iii) such other information concerning the Dedicated Land acreage that is in the possession of OWNERS and that OWNERS consider relevant concerning the identified Dedicated Land acreage.	~~Director, RDMD~~, **Director, OC Public Works**	Identification of Affordable Housing Site(s)/Acreage	The Development Agreement requirements were clarified in the Affordable Housing Implementation Agreement (AHIA) approved by the Board of Supervisors on July 18, 2006.	PC-Wide
366		DA	Public Benefit 44 (cont.)	Within 120 days following Master Area Plan approval, or prior to the expiration of such other period that is mutually acceptable to COUNTY and OWNERS	Affordable Housing	Development program	Affordable Housing Development Program	b. COUNTY shall prepare and deliver to OWNERS a plan describing COUNTY's intended development program with respect to the Dedicated Land acreage located within the relevant Planning Area	~~Director, RDMD~~, **Director, OC Public Works**	COUNTY shall prepare and deliver to OWNERS a plan describing COUNTY's intended development program	See guidance above related to Item No. 365.	PC-Wide
367		DA	Public Benefit 44 (cont.)	Within 45 days following OWNERS' receipt of the development plan/program	Affordable Housing		Affordable Housing Development Program Approval	c. OWNERS shall review and either approve or reject COUNTY's development plan/program by delivering written notice thereof to COUNTY.?	~~Director, RDMD~~, **Director, OC Public Works**	Written notice from OWNER to COUNTY of approval or rejection of COUNTY's development plan/program	See guidance above related to Item No. 365.	PC-Wide

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368		DA	Public Benefit 44 (cont.)	Following Identification of Affordable Housing Site(s)/Acreage and Approval of COUNTY Preliminary Development Plan/Program	Affordable Housing	60 gross acres, Very-Low and Low income households	Affordable Housing Land Dedication	d. Planning 10 gross acres of land (comprised of one or more sites) shall be developed, operated and managed by COUNTY as affordable housing site(s) for Very-Low and Low Income households in South Orange County	Director, ~~RDMD~~, **Director, OC Public Works**	Irrevocable Offer(s) of Dedication	See guidance above related to Item No. 365.	PC-Wide
369		DA	Public Benefit 44 (cont.)	If affordable housing site in PA, concurrent with Occurrence of Development Activity in Planning Area	Affordable Housing	Land conveyed and improved	Affordable Housing Land Improvement	e. Each portion of the Dedicated Land conveyed by OWNERS to COUNTY (vis-à-vis execution and delivery of a Deed in accordance with the provisions of Sections 3 and 4, above) shall be improved.	~~Director, RDMD~~, **Director, OC Public Works**	Provide rough grading of affordable housing site	See guidance above related to Item No. 365.	PC-Wide
389		EIR 589	PDF 4.3-2	When existing residences are to be removed	Population and Housing		Jobs/Housing Balance (cont.)	Rancho Mission Viejo would relocate displaced residents prior to approval of demolition permits. Mitigation Measure 4.3-1 further supports this project design feature.	Not Applicable (Director, OC Planning)	Relocate displaced residents	Letter from Rancho Mission Viejo listing all housing relocations (Cow Camp area and PA1) (Hyperlink #36)	Each PA
415		EIR 589	PDF 4.10-2	Prior to Approval of Master Area Plan for Planning Areas 2 & 3	Aesthetics and Visual Resources		Buffer	A 2,100-foot-wide buffer shall be provided between Coto de Caza and the project site.	~~Director, PDS~~ **Director, OC Planning** (Area Plans are reviewed by Planning Commission)	Approved Master Area Plan showing buffer	Verification that the Development Area boundaries for PAs 2 and 3 have been drawn sufficiently to comply.	PA-2 and 3
418		EIR 589	PDF 4.12-2	In conjunction with approval of Master Area Plan for Planning Area 3	Recreation		Sports Park	The project incorporates 20 to 25 acres of sports park	~~Director, PDS~~ **Director, OC Planning** (Area Plans are reviewed by Planning Commission)	Verification of incorporation of 20 to 25 acres of sports parks into the Master Park Implementation Plan		PA-3
437		Mission Viejo Settle-ment Agree-ment	3.1	Upon OCTA consideration of South Orange County Long-Range Transportation Study	Transportation and Circulation	OCTA, South Orange County Long-Range Transportation Study, SR-73 Extension	Potential SR-73 Extension:	The County and RMV shall actively support the City's advocacy to Orange County Transportation Authority ("OCTA") for the inclusion within the South Orange County Long-Range Transportation Study of a study for the potential SR-73 Extension that would traverse easterly to Antonio Parkway/Cow Camp Road or to the Foothill Transportation Corridor-South extension, as	Not applicable	County & RMV: Manifest support for inclusion of SR-73 Study in Long-Range Transp. Study		PC-Wide

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								a mixed-use/live/work district within South Orange County.				
438		Mission Viejo Settle-ment Agree-ment	3.2	Upon inclusion of SR-73 extension in the Long-Range Transp. Plan, the RTP and MPAH	Transportation and Circulation	SCRIP, Regional Transportation Plan (RTP), Master Plan of Arterial Highways, South Orange County Long-Range Transportation Plan	Potential SR-73 Extension (continued):	Upon inclusion of the SR-73 Extension in the Orange County Long-Range Transportation Plan, the Regional Transportation Plan ("RTP") and the Orange County Master Plan of Arterial Highways ("MPAH"), the City, through participation in SCRIP Part 2, may request (pursuant to Section V.9 of the SCRIP) that the County of Orange substitute the SR-73 Extension into the SCRIP program and that it re-prioritize funds from other improvements for the SR-73 Extension. The substitution of the SR-73 Extension shall (i) be done in compliance with SCRIP, including satisfaction of the requirements of CEQA as may be appropriate, and (ii) require approval of findings by the County of Orange, on recommendation(s) by the SCRIP Advisory Team, that said substitutions provide an equivalent level of mitigation for the impacts associated with cumulative growth within the sub-region to that mitigation identified in Program EIR No. 589.	SCRIP Administrator	City: Submit request for substitution of SR-73 extension County: Substitute SR-73 extension upon compliance with conditions		PC-Wide
439		Mission Viejo Settle-ment Agree-ment	4.1	When City requests SCRIP funds	Transportation and Circulation	SCRIP, Local and Regional Improvements	Total Obligation for SCRIP Improvements in the City of Mission Viejo	The Parties agree that the total monetary obligation of the Project to the City's Local and Regional Improvements is $18,123,000.00. The County shall allocate, re-allocate, or both, SCRIP funds in order to advance the funds identified by the City as needed to supplement existing or available funds to provide 100% funding for City's Local Improvements, based upon current cost estimates, as more particularly described on Exhibit A, attached hereto and incorporated herein by this reference.	SCRIP Administrator	County: Allocate or reallocate SCRIP funds (subject to requirements)	$18,123,000 is an aggregate RMV share for all City of Mission Viejo Local and Regional Improvements as set forth in the Mission Viejo Settlement Agreement (Exhibit A – Table 1). Revised SCRIP Table 4 lists a Cost Share by RMV of $2,000,000 for the initial milestone of	PC-Wide

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											the first building permit.	
440	274, 277 & 278 (DA Public Benefits 7 & 10)	Mission Viejo Settle-ment Agree-ment	4.1 (cont.)	When City requests change in funding priority for SCRIP funds	Transportation and Circulation	SCRIP, Regional Improvements, Measure M	Apply SCRIP funds first to Local Improvements in the City of Mission Viejo (including Crown Valley Parkway and Marguerite Parkway intersection, and I-5 Crown Valley Parkway bridge widening and southbound off-ramp improvements)	The SCRIP Funds shall first be applied to the City Local Improvements set forth in Table 1 of Exhibit A, and any remaining funds shall be expended on the Regional Improvements within the City set forth in Table 2 of Exhibit A, except that the City reserves the right to request changes in the funding priority and County and RMV shall cooperate in effectuating any such requests for revisions that may be made. The City agrees that the SCRIP funds are solely intended to supplement (and not replace) other existing funds available to the City that have been allocated for the identified improvements, and all of the funds received by the City pursuant to this Agreement shall be used for identified improvements. The City agrees to use its best efforts to obtain all potentially available or existing funds from other (i.e., non-RMV, non-SCRIP, non-County) sources, including Measure M funds.	SCRIP Administrator	County: Allocate SCRIP Funds in accordance with requirements. RMV & County: Cooperate with City in addressing requested changes City: Apply SCRIP funds in accordance with requirements		PC-Wide
441		Mission Viejo Settle-ment Agree-ment	4.2	When City requests SCRIP funds or reallocation thereof	Transportation and Circulation	SCRIP	Written Request to allocate and/or re-allocate SCRIP funds	A written request for allocation, reallocation, or combination thereof, of SCRIP funds, which includes documentation necessary to demonstrate City's compliance with the terms of this Agreement, shall be provided by the City to the SCRIP Administrator.	SCRIP Administrator	City: Submit written request to County for SCRIP funds		PC-Wide
442.1		Mission Viejo Settle-ment Agree-ment	4.3	0 to 1 EDU (Except for Model Homes)	Transportation and Circulation	SCRIP, Local Improvements, Funding Phasing Schedule	Allocate Funds for Local Improvements in the City of Mission Viejo	The allocation, re-allocation, or both, of SCRIP funds shall provide approximately $13,274,000.00 of the funds due to the City for City Local Improvements pursuant to this Agreement in accordance with the Funding Phasing Schedule shown on Exhibit B. attached hereto and	SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo	County: Allocate or reallocate SCRIP funds in accordance with Funding Phasing Schedule	Revised SCRIP Table 4 lists a Total Share by RMV of $2,000,000 for the initial milestone of the first building permit, per the Mission Viejo	PC-Wide

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								incorporated herein by this reference. All estimates of development timing (and the corresponding funding phasing schedule) are estimates. Funds for City Local Improvements shall be paid pursuant to the Funding Phasing Schedule established in Exhibit 8.			Settlement Agreement.	
442.2		Mission Viejo Settle-ment Agree-ment	4.3 (continued)	1001 EDU-2,500 EDU	Transportation and Circulation	SCRIP, Local Improvements, Funding Phasing Schedule	Allocate Funds for Local Improvements in the City of Mission Viejo (cont.)	See above	SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo	County: Allocate or reallocate SCRIP funds in accordance with Funding Phasing Schedule	Revised SCRIP Table 4 lists a Cost Share by RMV of $13,274,000 for City Local Improvements through project buildout, per the Mission Viejo Settlement Agreement.	
443	279-280 (DA Public Benefit 11) 283 (DA Public Benefit 11), 343--348 (DA Public Benefits 35 & 36)	Mission Viejo Settle-ment Agree-ment	4.4	1001 EDU-2,500 EDU	Transportation and Circulation	SCRIP, Regional Improvements	Allocate and/or Re-allocate Funds for Regional Improvements in the City of Mission Viejo	The allocation, re-allocation, or both, of SCRIP funds shall provide approximately $4,849,000.00 of the funds due to the City for Regional Improvements pursuant to this Agreement. Funds for Regional Improvements shall be paid when all of the following conditions have occurred: (a) a contract relating to the design and/or construction of the specific Regional Improvement has been executed; and (b) funds relating to said Regional Improvement have been received by the County. In the absence of the conditions set forth in subsections (a) and (b) of this Section 4.4, the County may elect, in its sole and unfettered discretion, to advance Funds for Regional Improvements if the SCRIP Administrator and/or County determines that the SCRIP Program has sufficient funding capacity to advance said funding request.	SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo	County: Allocate or reallocate SCRIP funds following satisfaction of conditions	Revised SCRIP Table 4 lists a Total Cost Share by RMV of $4,849,000 through Project Buildout for Regional Improvements, per the Mission Viejo Settlement Agreement.	PC-Wide

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444		Mission Viejo Settle-ment Agree-ment	4.5	When City requests reallocation of SCRIP funds	Transportation and Circulation	SCRIP, Regional Improvements, Local Improvements	Allocation of Regional Funds for Local or Regional Improvements in City of Mission Viejo	Nothing in this agreement shall preclude the City from petitioning the County, pursuant to the provisions of SCRIP Part 2, for re-allocation of any available funds or re-prioritization of any City Local or Regional Improvement.	SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo	City: Submit petition to County for reallocation of SCRIP funds		PC-Wide
445	270 (DA Public Benefit 3) and 2750 (DA Public Benefit 8)	Mission Viejo Settle-ment Agree-ment	4.6	When SCRIP funds are reallocated from regional improvements to other SCRIP improvements	Transportation and Circulation	SCRIP, Regional Improvements, SB Ramp Improvements at I-5/Oso Parkway and/or the Saddleback/I-5 Connectors	Regional Improvements in the City of Mission Viejo (including Flex Funds Part I Roadway Improvements, and Oso Parkway widening in unincorporated County, exclusive of Las Flores)	The City agrees that those funds initially allocated to the regional improvements benefiting the City under SCRIP (SB Ramp Improvements at I-5/Oso Parkway and/or the Saddleback/I-5 Connectors) may be re-allocated to other SCRIP improvements set forth in Exhibit A, in accordance with applicable SCRIP provisions.	Not applicable	Not applicable; City has consented to reallocation		PC-Wide
446		Mission Viejo Settle-ment Agree-ment	5.1	During SCRIP Part 2	Transportation and Circulation	SCRIP, SCRIP Part 2	SCRIP Implementation and Monitoring	During SCRIP Part 2, the County will further define the strategies for implementation of transportation improvements, after consulting with the SCRIP Advisory Team in accordance with Sections V.15 and V.17 of the SCRIP. The City agrees to participate actively in SCRIP Part 2, by serving as a member of the Advisory Team, thereby allowing City input into transportation implementation strategies.	SCRIP Administrator to confirm RMV satisfaction of all requirements per City of Mission Viejo	City: Participate in SCRIP Part 2 and serve on Advisory Team County: Consult with SCRIP Advisory Team to further define SCRIP strategies		PC-Wide
447	324-326 (DA Public Benefit 29) & 330-333 (DA Public Benefit 31)	Mission Viejo Settle-ment Agree-ment	5.2	Within 2 weeks following County's receipt of each annual Ranch Plan AMR	Transportation and Circulation	SCRIP, AMR	Further Cooperation In Support of Regional Transportation:	Pursuant to SCRIP, the County shall utilize an Annual Monitoring Report ("AMR") program to monitor development of the Ranch Plan and related traffic, which process includes preparation, and submittal to the County, of an AMR in the fall of each year, as set forth in section 11 of General Provisions of the Ranch Plan Planned Community Program Text. County agrees to provide to the City, for its review and comment, a copy of each AMR submitted by RMV in compliance with SCRIP within	~~Director PDS~~, **Director, OC Planning**	County: Transmit AMR to City of Mission Viejo within identified time frame	First AMR was completed by end of 2006 and provided to City thereafter.	PC-Wide

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								2 weeks after the date on which RMV submits the AMR to the County.				
448		Mission Viejo Settle-ment Agree-ment	6.1	During consideration of re-authorization of Measure M	Transportation and Circulation	SCRIP, regionally significant transportation projects, Measure M	Further Cooperation In Support of Regional Transportation (cont.):	The Parties agree to cooperate with OCTA and other agencies in identifying and developing potential regionally significant transportation projects and programs for inclusion in any re-authorization of Measure M.		All parties to cooperate with OCTA and other agencies		PC-Wide
449		Mission Viejo Settle-ment Agree-ment	6.2	On-going	Transportation and Circulation	SCRIP, South County Sub-Area Model (SCSAM)	SCRIP Implementation and Monitoring (cont.):	In order to maximize consistency between City and County traffic forecasting, the County and RMV shall provide current and, as it becomes available, future socioeconomic, land use and traffic characteristics contained within the South County Sub-Area Model ("SCSAM") to the City for use in developing and refining the City's traffic model.	~~Director RDMD~~, **Director, OC Public Works**	County & RMV: Provide SCSAM data to City	Completed: Info re SCSAM was provided by Austin-Foust to County (for City) on 9/14/05	PC-Wide
450	209-210 (PC Text, Gen. Reg. 12)	San Clemente Settle-ment Agree-ment	K.3.	Upon execution of any settlement agreement pertaining to the Ranch Plan project	PC Statistical Table Reallocations	PC Statistical Table, San Juan Creek Watershed, San Mateo Creek Watershed	Limits to Transfer of Residential Density to the San Mateo Creek Watershed	Rancho Mission Viejo (RMV) shall not enter into any written and oral settlement agreement with any third party in connection with any dispute relating to the Ranch Plan Project and Ranch Plan Project Approvals that results in a transfer of residential density from the San Juan Creek Watershed (i.e., Ranch Plan Project Planning Areas 1, 2, 3, 4 and 5) to the San Mateo Creek Watershed (i.e., Ranch Plan Project Planning Areas 6, 7, 8 and 9) over that residential density currently allocated in the Ranch Plan PC Community Statistical Table, a constituent element of the Ranch Plan PC Program.		RMV: No execution of Settlement Agreement that reallocates density from SJC watershed to SMC watershed in excess of limits specified in P.C. Text	August '05 settlement agreement with Resource Organizations is consistent with this provision	PC-Wide
451	209-210 (PC Text, Gen. Reg. 12)	San Clemente Settle-ment Agree-ment	K.3. (cont.)	Concurrent with planning activities contemplating shift of units from SJC watershed to SMC watershed	PC Statistical Table Reallocations	PC Statistical Table, San Juan Creek Watershed, San Mateo Creek Watershed	Limits to Transfer of Residential Density to the San Mateo Creek Watershed (continued):	Notwithstanding the foregoing, RMV in connection with future planning and entitlement activities, shall not transfer residential density of more than ten percent (10%) over that residential density currently allocated in the		RMV: No transfer of residential units in contravention of limitation City: No challenge of any proposed transfer that complies with limitations	On-going	PC-Wide

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								Ranch Plan Community Statistical Table (i.e., 161 dwelling units) from the San Juan Creek Watershed to the San Mateo Creek Watershed. City shall have no right to challenge any transfer of residential density from the San Juan Creek Watershed to any one or more of the planning areas in the San Mateo Creek Watershed that is ten percent or less of the San Mateo Watershed density and notwithstanding that any other consent may be required.				
452		San Clemente Settle-ment Agree-ment	K.4	Within ninety (90) days of the effective date of the Settlement Agreement (Effective date of agreement December 8, 2004, funding of study due March 8, 2005)	Recreation	Regional utilization of recreational facilities and programs, Recreational Amenities	Recreational Facilities Cooperation Study	Rancho Mission Viejo (RMV), at its sole cost and expense, shall fund a study of the potential regional utilization of recreational facilities and programs which shall include, but not be limited to, an analysis of the opportunities, benefits and potential uses of the City's recreational facilities, including the Recreational Amenities, and programs by future Ranch Plan residents.		RMV: Fund a study of the potential regional utilization of recreational facilities and programs	Completed: Compliance deadline was extended; Condition satisfied per submittal of Recreational Study to City of San Clemente on January 31, 2006 [Hyperlink #39]	PC-Wide
453		San Clemente Settle-ment Agree-ment	K.4 (cont.)	Within ninety (90) days of the effective date of the Settlement Agreement (i.e., on or before March 8, 2005)	Recreation	Regional utilization of recreational facilities and programs, Recreational Amenities	Recreational Facilities Cooperation Study (continued)	The Parties shall determine the scope of the study within ninety (90) days of the effective Date. After the completion of the study, the City and RMV shall discuss potential funding mechanisms for RMV to participate in the Recreation Amenities. The parties agree that to the extent there is any financial participation by RMV with Respect to the Recreational Amenities, such participation is an accommodation to resolve other issues raised by City, and in no way evidences an acknowledgement of any CEQA impact or mitigation obligation on RMV's part.		Parties: Determine scope of recreational amenity study Parties: Discuss potential funding mechanisms for RMV participation in recreational amenities	Completed: Compliance deadline was extended; Condition satisfied per submittal of Recreational Study to City of San Clemente on January 31, 2006 [Hyperlink #39]	PC-Wide

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454		Resource Organ-izations Settle-ment Agree-ment	3.1	No required timeframe; rights operative throughout term of Ranch Plan project	Approved Uses and Practices		Right to Development in Conformity with Project Entitlements	Except as expressly provided in this Agreement, RMV shall have the right, but not the obligation, to develop and implement the Project in accordance with the Project Approvals and Subsequent Project Approvals.	Applicable Permitting Authority	RMV: Submit Master Area and Subarea Plan applications that comply with the terms of Project Approvals/ Subsequent Project Approvals and the Resource Organizations Settlement Agreement	Ongoing: Not a requirement	PC-Wide
455		Resource Organ-izations Settle-ment Agree-ment	3.2	No required timeframe; rights and obligations operative throughout term of Ranch Plan project	Approved Uses and Practices	Subsequent Project Approvals, Wildlife/Resource Agencies	Development and Use of Project in Conformity with Settlement Agreement	RMV shall not file any application for, or otherwise seek, a Subsequent Project Approval from the County, or any municipal corporation that becomes a succeeding land use permitting authority through annexation, that is inconsistent with the Project Approvals or this Agreement. The Parties acknowledge that the Subsequent Project Approvals granted by the Wildlife/Resource Agencies and/or other permitting authorities may vary from the scope and nature of the Project as contemplated by this Agreement. Irrespective of the scope, nature and extent of Project development activity hereafter authorized/approved by the Wildlife/Resource Agencies and/or other permitting authorities, RMV shall develop and implement the Project in a manner that complies with the terms and provisions of this Agreement.	Applicable Permitting Authority	RMV: Submit Master Area and Subarea Plan applications that comply with the terms of Project Approvals (GPA/ZC/EIR) and the Resource Organizations Settlement Agreement	Ongoing.	PC-Wide

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456		Resource Organ-izations Settle-ment Agree-ment	3.3	Concurrent with submittal of Master Area Plan ("MAP") application	Approved Uses and Practices		Confirmation of Development Area Boundaries	**(a) Concurrent with its submission, RMV shall provide each Resource Organization a copy of any application seeking approval of a Master Area Plan for any Development Area. The Resource Organizations may notify RMV and the Applicant that the boundaries for the Development Area that is the subject of the application are not in conformity with those boundaries depicted in Exhibit A. The provision of such notice shall commence the process set forth in Section 14.2, below.**	~~Director PDS~~, **Director, OC Planning**	RMV: Provide copy of MAP application to each applicable Resource Organization	Ongoing. [Note: PA1 MAP application provided to ROs on 4/19/06]	PC-Wide
457		Resource Organ-izations Settle-ment Agree-ment	3.3 (cont.)	Following Resource Organizations' ("ROs'") receipt of MAP application	Approved Uses and Practices		Written Acknowledgement of Development Area Boundaries	**(b) At any time following the Resource Organizations' receipt of any Master Area Plan application, RMV may request that the Resource Organization Designee provide written acknowledgment of the conformance of the Development Area boundary reflected in Exhibit A with the Development Area boundary depicted in the Master Area Plan application. If the Resource Organization Designee does not provide such written acknowledgement within thirty (30) calendar days of RMV's request, the Development Area boundary in the Master Area Plan application shall be deemed to conform to the Development Area boundary in Exhibit A.**	~~Director PDS~~, **Director, OC Planning**	Written acknowledg-ment from ROs -*OR*- evidence that 30 days have transpired since transmittal of MAP application to ROs	No Request Yet Submitted to ROs	PC-Wide

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458	209-210 (PC Text, Gen. Reg. 12) 450-451 (San Clemente Settlement Agreement, K.3)	Resource Organ-izations Settle-ment Agree-ment	3.3 (cont.)	In conjunction with Area Plan approvals	Approved Uses and Practices	Residential units, residential uses, and non-residential square footage and uses	Allocation/Reallocation of Authorized Development	**(c) RMV shall have the right, consistent with the provisions of the Ranch Plan Planned Community Text, to relocate and/or reallocate residential units, residential uses, and non-residential square footage and uses among and between individual Planning Areas in order to allow, within the Development Areas depicted in Exhibit A, for the full development of residential units, residential uses and nonresidential square footage and uses authorized in the Project Approvals and Subsequent Project Approvals, and to allow for the fulfillment of Project conditions of approval and Development Agreement obligations (including facilitating the County's efforts and obligations regarding affordable housing as set forth in the Project Development Agreement), provided that any such reallocation complies with the other terms and provisions of this Agreement.**	~~Director PDS~~ (Planning Commission to approve Area Plans), **Director, OC Planning** (Planning Commission to approve Area Plans)	Revision to statistical table; confirmation that relocation/ reallocation is consistent with P.C. Text	Ongoing.	PC-Wide
459	209-210 (PC Text, Gen. Reg. 12) 450-451 (San Clemente Settlement Agreement, K.3)	Resource Organ-izations Settle-ment Agree-ment	3.3 (cont.)	In conjunction with preparation of Master Area Plans; throughout term of Ranch Plan project implementation	Approved Uses and Practices	Development areas	Allocation/Reallocation of Authorized Development (cont.)	**(c) (cont.) This Section 3.3(c) applies only to uses within Development Areas and is not intended to authorize any additional or expanded uses within Defined Open Space.**	~~Director PDS~~, **Director, OC Planning**	Confirm that additional / expanded uses within Defined Open Space are not contemplated or authorized.	Ongoing. [Note: PA1 MAP application provided to ROs on 4/19/06]	PC-Wide
460		Resource Organ-izations Settle-ment Agree-ment	3.4	No required timeframe; rights and limitations operative throughout term of Ranch Plan project	Approved Uses and Practices	Defined Open Space	Open Space Uses	**Except as expressly authorized by this Agreement, uses within Defined Open Space shall be limited to Open Space Uses. Except as otherwise limited or modified by this Agreement, RMV shall have the right, but not the obligation, to conduct and**	Applicable Permitting Authority	Limit uses within Defined Open Space to more restrictive Open Space Uses (per definitions in Resource Organization Settlement Agreement)	Ongoing.	PC-Wide

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								perform any/all of the Open Space Uses within any/all portions of the Ranch Plan Area.				
461		Resource Organ-izations Settle-ment Agree-ment	3.5	No required timeframe; rights operative throughout term of Ranch Plan project	Approved Uses and Practices	Ranching and agricultural practices	Conduct of Ranching and Agricultural Practices in Development Areas	**RMV shall have the right, but not the obligation, to carry out and conduct ranching and agricultural practices throughout the Development Areas (and each of them) in a manner consistent with the Project Approvals and Subsequent Project Approvals. (See Planned Community Program Text Section III. H.)**	~~Director PDS~~, **Director, OC Planning**	Development of project per Ranch Plan Planned Community Program Text, Section III.H.	Ongoing.	PC-Wide
462		Resource Organ-izations Settle-ment Agree-ment	3.6	Prior to submittal of any application affecting recycling and recovery facility; limitation operative throughout term of Ranch Plan project	Approved Uses and Practices	Adjacent to Avenida La Pata, recyclable materials	Recycling and Recovery Facility	**RMV shall have the right, but not the obligation, to relocate, maintain, operate and/or lease a recycling and recovery facility ("Recycling Facility") adjacent to Avenida La Pata and within the bounds of the area depicted as "Recycling and Recovery Facility Area" in the attached Exhibit C. The Recycling Facility shall not exceed 18.3 acres in size, and use of the facility/area shall be limited to the collection, sorting, processing, storage and distribution of recyclable materials. [Note: Section 3.6 was revised to clarify that size of Recycling Facility can be 18.3 acres rather than 15 acres.]**	~~Director PDS~~ or Zoning Administrator per P.C. Text page 89, c.2, **Director, OC Planning** or Zoning Administrator per P.C. Text page 89, c.2	Relocation, operation and maintenance of Recycling Facility per terms of Resource Organization Settlement Agreement	TBD	PC-Wide
463	5 (MM 4.3-1)	Resource Organ-izations Settle-ment Agree-ment	3.7	No required timeframe; rights and limitations operative throughout term of Ranch Plan project	Approved Uses and Practices	PC Text Section III.H.3.c.1, Employee Housing Area	Employee Housing	**RMV shall have the right, but not the obligation, to relocate, maintain, and operate employee housing within the bounds of the area proximately depicted as "Employee Housing Area" in the attached Exhibit D. (see also PC Text Section III.H.3.c.1, which regulates how existing employee housing "may be relocated within and throughout the Ranch Plan PC Area without the need**	No permit approval required	Relocation, maintenance and operation of employee housing per terms of Resource Organization Settlement Agreement	TBD	Planning Areas 1 and 3

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								for issuance of any new permit or other prior approval from the County")				
487		Resource Organ-izations Settle-ment Agree-ment	4.6 (a)	Prior to submittal of any Area Plan for PA 3; rights and limitations operative throughout term of Ranch Plan project	Activities Within Identified Planning Areas		Planning Area 3	**(a) Development activities within Planning Area 3 (as reconfigured and depicted in Exhibit A as "PA 3") may proceed in accordance with the terms established under the Project Approvals and Subsequent Project Approvals, except that RMV shall identify and maintain within Planning Area 3 a development setback (the "Planning Area 3 Setback") sufficient to provide a restricted use area not less than 200 meters in width, extending perpendicularly and generally westerly of the centerline of San Juan Creek. The conceptual location of the setback area is depicted in Exhibit A.**		1. All applications and development shall comply with these restrictions 2. RMV to identify and maintain 200 meter setback	Completed: Applied to Ranch Plan Planned Community Development Map, as revised July 26, 2006, per Planning Commission Resolution No. 06-05) [Hyperlink #42]	PA-3
488		Resource Organ-izations Settle-ment Agree-ment	4.6 (a) (cont.)	Prior to submittal of any Area Plan for PA 3; rights and limitations operative throughout term of Ranch Plan project	Activities Within Identified Planning Areas		Planning Area 3 (cont.)	**(a) (cont.) Notwithstanding any other provision of this Agreement, activities within the Planning Area 3 Setback shall be consistent with the provisions and limitations set forth in Section 4.8, below. Nothing in this Agreement shall limit or otherwise restrict RMV's right to seek and obtain from the relevant Wildlife/Resource Agencies a modification and/or reduction of any other required setback area(s) located westerly of the Planning Area 3 Setback required by this Agreement.**		1. All applications and development shall comply with these restrictions 2. RMV to maintain 200 meter setback in accordance with identified requirements	Ongoing.	PA-3

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489		Resource Organ-izations Settle-ment Agree-ment	4.6 (b)	Prior to submittal of any Area Plan for PA 3 involving proposed replacement of Cow Camp uses	Activities Within Identified Planning Areas		Planning Areas 3 and 4	**(b) Replacement of Cow Camp in Planning Area 3 shall not be allowed unless RMV obtains a NCCP or Biological Opinion that addresses potential impacts to the arroyo toad. This Section 4.6(b) shall not apply to the relocation of agricultural uses or employee housing as set forth in Section 3.7.**		Execution of NCCP -**OR**- issuance of Biological Opinion that addresses arroyo toad impacts	Refers to the relocation of agricultural uses.	PA-3
499		Resource Organ-izations Settle-ment Agree-ment	4.8 (cont.)	Prior to submittal of any Area Plan for PA-3 and/or PA-4; restrictions operative throughout term of Ranch Plan project	Activities Within Identified Planning Areas		Uses in Setback Areas (cont.)	**(c) Creation, installation and maintenance of the following infrastructure facilities necessary for implementation of the Project, provided that said facilities are consistent with any approved/executed NCCP, MSAA and/or SAMP or otherwise authorized by USFWS, or CDFG:**		All applications and development shall comply with these restrictions	TBD	PA-3 & 4
500		Resource Organ-izations Settle-ment Agree-ment	4.8 (cont.)	Prior to submittal of any Area Plan for PA-3 and/or PA-4; restrictions operative throughout term of Ranch Plan project	Activities Within Identified Planning Areas		Uses in Setback Areas (cont.)	**(c) (cont.) (i) natural treatment systems for water quality treatment and related drainage facilities (e.g., outfalls), if such facilities meet arroyo toad ecological requirements as determined by USFWS; (ii) bridge crossings approved by CDFG, (iii) underground water, sewer and power facilities, if accompanied by surface restoration; (iv) other necessary infrastructure facilities that cannot be located within a Development Area outside the Planning Area 3 or Planning Area 4 Setback; and (v) pedestrian, vehicular and other access reasonably necessary to accomplish and perform the uses and activities permitted in this Section 4.8.**		All applications and development shall comply with these restrictions	TBD	PA-3 & 4

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502		Resource Organ-izations Settle-ment Agree-ment	6	Offer of Dedication prior to com-mencement of any grading or construction activities within a phase of development (i.e., Subarea) Recordation of Conservation Easement upon issuance of 75 percent of C of O's within a Subarea (incremental conservation easement dedication)	Phased Dedication and Management of Open Space:		Phased Dedication and Management of Open Space:	**All remaining Defined Open Space located within the San Juan Creek and San Juan Creek watersheds shall ultimately be placed in conservation, agricultural or other restrictive easements (collectively "Conservation Easements"). The Conservation Easements shall incorporate the terms of this Agreement and shall provide a right of enforcement to the Resource Organizations. The required Conservation Easement dedications within each watershed shall occur in phases as development proceeds within the respective watershed, and shall be consistent with the requirements of local, state and federal approvals and entitlements. The specific portions of the Defined Open Space to be placed in a Conservation Easement in the San Juan Creek watershed in connection with the implementation of the Project in Development Areas 1 through 7 and Development Area 9 shall be roughly proportionate to the size of the relevant Development Area and the sensitivity of resources impacted by said Development Area.**		RMV: Consistent with the Open Space Agreement, phased dedication/ conservation of Defined Open Space in conjunction with development of Planning Areas 1 through 7 and PA-9. [Note: Under terms of the Settlement Agreement, Development Areas (Planning Areas) 6, 7 and 9 will not be developed.]	Refer to most current phased dedication map as part of approved Open Space Agreement [Hyperlink #14]	Each PA
504		Resource Organ-izations Settle-ment Agree-ment	7.1	Prior to commencement of any grading or construction activities within the first Subarea	Long-Term Management Funding Strategy:		Long-Term Management Funding Strategy:	**RMV shall cause to be established a long-term funding program for management and oversight of all Defined Open Space areas placed into Conservation Easements. Individual funding resources for the program shall be developed over time as the Project is implemented. Sources of funds may include, but not be limited to: (i) imposition**		RMV: Consistent with the Open Space Agreement, establish a long-term funding program for management and oversight of all Defined Open Space areas placed into conservation, agricultural or other restrictive easements.	**Completed for entire Planned Community, per approved NCCP Implementation Agreement** [Hyperlink #43]	Each PA

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								of [illegible] assessments and/or fees upon development within the Project area; (ii) conservation and habitat bond proceeds; (iii) amounts collected pursuant to the special rule and fee program established for the Southern Subregion NCCP/HCP under Section 4(d) of the Endangered Species Act; and (iv) amounts received from agencies, governmental authorities and other entities/individuals engaged in open space preservation and management activities.				
505		Resource Organ-izations Settle-ment Agree-ment	7.2	Prior to sale, conveyance or transfer of fee interest (or management authority) in open space lands to unaffiliated third party (other than a public agency/body)	Long-Term Management Funding Strategy (cont.):		Long-Term Management Funding Strategy (cont.):	In the event RMV: (i) conveys or otherwise transfers its fee interest in all or a portion of the Defined Open Space lands to an unaffiliated third party (other than to a public agency or body or a utility); or (ii) relinquishes or otherwise transfers its management authority/rights over all or a portion of the Defined Open Space lands to an unaffiliated third party (other than to a public agency or body or a utility), RMV shall ensure that a funding program is in place adequate to meet the long-term management and oversight needs of those portions of the Defined Open Space conveyed and relinquished.		RMV: Ensure that long-term funding program is in place prior to transfer of fee interest (or management authority) in open space lands to an unaffiliated third party	Completed for entire Planned Community, per approved Chapter 12 of HCP [Hyperlink #30]	Each PA
506		Resource Organ-izations Settle-ment Agree-ment	7.3 (i)	Prior to issuance of a grading permit within each Subarea	Long-Term Management Funding Strategy (cont.):		Long-Term Management Funding Strategy (cont.):	Prior to the commencement of any grading or construction activities in connection with new development within any Subarea Plan portion of a Planning Area ("Subarea"), RMV shall provide the Resource Organizations documentation demonstrating that: (i) an		RMV: Provide ROs with documentation demonstrating establishment of Open Space Management Fund	Completed for entire Planned Community, per approved Chapter 12 of HCP [Hyperlink #30]	Each PA

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								Open Space Management Fund ("Fund") has been established for the sole purpose of managing the Defined Open Space to be dedicated in conjunction with development of the subject Subarea consistent with the obligations and requirements established in the Conservation Easements, the AMP, and any other program, permit or entitlement applicable to the Project;				
507		Resource Organ-izations Settle-ment Agree-ment	7.3 (ii)	See above	Long-Term Management Funding Strategy (cont.):		Long-Term Management Funding Strategy (cont.):	**(ii) all funds necessary to fully implement management and monitoring requirements for the dedicated open space associated with the Subarea for at least a five-year period have been obtained or committed;**		RMV: Provide ROs with evidence of near-term (i.e., 5 years) funding for dedicated open space	**Completed for entire Planned Community, per approved Chapter 12 of HCP** [Hyperlink #30]	Each PA
508		Resource Organ-izations Settle-ment Agree-ment	7.3 (iii)	See above	Long-Term Management Funding Strategy (cont.):		Long-Term Management Funding Strategy (cont.):	**(iii) a long-term funding plan for the dedicated open space associated with the Subarea for subsequent years is in place; and**		RMV: Provide ROs with evidence of long-term (i.e., greater than 5 years) funding plan for dedicated open space	**Completed for entire Planned Community, per approved Chapter 12 of HCP** [Hyperlink #30]	Each PA
509		Resource Organ-izations Settle-ment Agree-ment	7.3 (iv)	See above	Long-Term Management Funding Strategy (cont.):		Long-Term Management Funding Strategy (cont.):	**(iv) a management plan governing the Defined Open Space lands to be dedicated in conjunction with development of the subject Subarea and incorporating all applicable requirements has been developed. The documentation shall include a detailed five-year budget identifying the projected costs of implementing the plan.**		RMV: Provide ROs with evidence of management plan (including 5-year budget)	**Management Plan on-going for entire Planned Community, per approved Chapter 12 of HCP** [Hyperlink #30]	Each PA
509.1		Resource Organ-izations Settle-ment Agree-ment	7.3	Following recordation of conservation easements, and continuing throughout term of the Ranch Plan project	Long-Term Management Funding Strategy (cont.):		Long-Term Management Funding Strategy (cont.):	**After recordation of Conservation Easements, and pending any conveyance and relinquishment of Defined Open Space lands, RMV and/or its designee shall implement the open space management plan using the resources in the Fund.**		RMV: Implement open space management plan using collected funding resources	**Completed for entire Planned Community, per approved Chapter 12 of HCP** [Hyperlink #30]	Each PA

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510	520 (ROSA Exhibit G)	Resource Organ-izations Settle-ment Agree-ment	8	Annually, as part of the **Annual Compliance and Effectiveness Report (ACER)** preparation process	Limited Right of Inspection:		Limited Right of Inspection:	**Resource Organization representatives Joel Reynolds and/or Dan Silver the opportunity to physically verify, on an annual basis, RMV's compliance with the terms of this Agreement. RMV shall have the right to approve any person nominated to undertake this verification in place of either Joel Reynolds or Dan Silver, and RMV's approval shall not be unreasonably withheld. In the alternative, if the Resource Organizations so elect, the verification of RMV's compliance with the terms of this Agreement shall be undertaken by the County, in which case the County shall perform the next inspection no later than one (1) year from the date of the last inspection, and on an annual basis thereafter, unless and until such time as the Resource Organizations, by written notice to the County and RMV, elect to resume inspections pursuant to this Section 8.**		RMV: Provide opportunity to identified RO representatives (or County, as appropriate) to conduct annual, authorized inspections	First Annual Compliance and Effectiveness Report (ACER) approved in 2007, and conducted annually thereafter. First Inspection Occurred on October 12, 2006. Resource Organizations have elected not to go in field thereafter.	PC-Wide
510.1		Resource Organ-izations Settle-ment Agree-ment	8 (cont.)	Annually, as part of the AMR preparation process	Limited Right of Inspection (cont.):		Limited Right of Inspection (cont.):	**The County's findings from this annual inspection shall be included verbatim in the Annual Monitoring Report required by Section 1. B.11 of the Ranch Plan Planned Community Text, which shall be provided to the Resource Organizations.**		County: 1. Incorporate findings into AMR, and 2. Provide AMRs to ROs		PC-Wide
510.2		Resource Organ-izations Settle-ment Agree-ment	9.1	On or before 8/31/05	Dismissal of Ranch Plan Litigation.		Dismissal of Ranch Plan Litigation.	**Within fifteen (15) days following [the] Effective Date, the Resource Organizations shall dismiss, with prejudice, the Ranch Plan Litigation.**		ROs: File Notice of Dismissal.	**Completed for entire Ranch Plan August 17, 2005**	

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510.3		Resource Organ-izations Settle-ment Agree-ment	9.2	Within 30 days following the dismissal of the Ranch Plan Litigation	Attorneys' Fees and Costs.		Attorneys' Fees and Costs	**For and in consideration of the Resource Organizations the sum of Three Hundred Fifty Thousand and No/100 Dollars ($350,000.00) in full satisfaction of any award to which Resource Organizations may be entitled under Section 1021.5 of the California Code of Civil Procedure. RMV and the Resource Organizations agree that the Resource Organizations may not seek or be awarded any additional amounts for attorneys' fees or costs in connection with the Ranch Plan Litigation. RMV shall pay the foregoing amount within thirty (30) days following the dismissal of the Ranch Plan Litigation. The County shall have no liability for the payment of the attorneys' fees or costs of RMV or the Resource Organizations incurred in connection with the Ranch Plan Litigation.**		RMV: Pay $350,000 to Resource Organizations	Paid in 2005	
511		Resource Organ-izations Settle-ment Agree-ment	Exhibit B	Prior to submittal of any Area Plan which includes Open Space land uses; restrictions operative throughout term of Ranch Plan project	Uses Prohibited in Defined Open Space		Uses Prohibited in Defined Open Space	**Notwithstanding their classification in the Project Approvals as approved open space uses, the following uses and activities shall be prohibited within the Defined Open Space.** **1. Nurseries** **2. Construction offices** **3. Maintenance yards** **4. Commercial stables (except the St. Augustine's Training Center and Stables or successors in its current location)** **5. Research and development facilities (except for the uses at the Northrup Grumman-Capistrano Test Site permitted by the lease)** **6. Waste disposal operation and associated uses (except the Recycling and**		Area Plan compliance with these restrictions.	Noted	Each PA

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								Recordation Hearing as described in Section 3.7 of this Agreement) **7. Storage facilities** **8. Mining and quarrying of materials** **9. Materials recycling and recovery facilities (except the Recycling and Recovery Facility as described in Section 3.7 of this Agreement)** **10. New, expanded and/or relocated citrus or other orchard crops (not including the additional 50 acres of orchards allowed pursuant to Section 4.2(b) of this Agreement)**				
511.1		Resource Organ-izations Settle-ment Agree-ment	Exhibit B	Prior to submittal of any Area Plan which includes Open Space land uses; restrictions operative throughout term of Ranch Plan project	Uses Prohibited in Defined Open Space (cont.)		Uses Prohibited in Defined Open Space (cont.)	**11. New, expanded and/or relocated dry farming** **12. Irrigated crops (except citrus or other orchard crops as provided in Paragraph 10, above)** **13. Packing plants (except when located within allowed orchards)** **14. Any uses or activities that are not Existing Agricultural / Ranching Practices as defined in the section 1.4 of Agreement, except as expressly authorized by this Agreement** **15. Caretaker or employee housing and related facilities except as authorized by Sections 3.8 and 4.2(a) of this Agreement** **16. Feed lots** **17. Active recreation and related facilities except Existing Agricultural / Ranching Practices** **18. Passive public recreation except as may be authorized via an NCCP or equivalent ecologically-based management plan** **19. Fire station or permanent wildland fire training facility** **20. Fuel modification zones**		Area Plan compliance with these restrictions.	Noted	Each PA

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521		EIR 589	SC 4.4-1	Prior to the issuance of a grading permit	Geology and Soils:		Geology and Soils	Prior to the issuance of a grading permit, the applicant shall submit a geotechnical report to the ~~Manager of Subdivision~~ **Manager OC Planned Communities** and Grading, for approval. The report shall meet the requirements outlined in the OC Grading Code and Manual. (County Standard Condition G01)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of satisfactory geotechnical report		Each PA
522		EIR 589	SC 4.4-2	Prior to the issuance of a grading permit	Geology and Soils (cont.):		Geology and Soils (cont.):	Prior to the issuance of any grading permits, the Manager of Subdivision and Grading shall review the grading plan for conformance with the grading shown on the approved tentative map. If the applicant submits a grading plan which the ~~Manager of Subdivision and Grading~~ **Manager OC Planned Communities** determines to show a significant deviation from the grading shown on the approved tentative map, specifically with regard to slope heights, slope ratios, pad elevations or configurations, the Subdivision Committee shall review the plan for a finding of substantial conformance. (County Standard Condition G02)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Approval of grading plan demonstrating submittal conformance with the grading shown on the approved TTM		Each PA
523		EIR 589	SC 4.4-2 (cont.)	Prior to the issuance of a grading permit	Geology and Soils (cont.):		Geology and Soils (cont.):	f the Subdivision Committee fails to make such a finding, the applicant shall process a revised tentative map; or, if a final map has been recorded, the applicant shall process a new tentative map or a site development permit application per Orange County Zoning Code Sections 7-9-139 and 7-9-150. Additionally, the applicant shall process a new environmental assessment for determination by the decision making entity. (County Standard Condition G02)	Subdivision Committee review for substantial conformance, if required	Process new subdivision, if necessary		Each PA

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524		EIR 589	SC 4.4-3	Prior to the recordation of a subdivision map or prior to issuance of a Grading Permit, whichever comes first	Geology and Soils (cont.):		Geology and Soils (cont.):	Prior to the recordation of a subdivision map or prior to the issuance of any grading permit, whichever comes first, and if determined necessary by the County of Orange Manager, Subdivision and Grading, the applicant shall record a letter of consent from the affected property owners permitting off-site grading, cross lot drainage, drainage diversions and/or unnatural concentrations. The applicant shall obtain approval of the form of the letter of consent from the Manager, Subdivision and Grading Services before recordation of the letter. (County Standard Condition G04)	~~County of Orange Director of Planning & Development Services,~~ **Director, OC Planning**	Recordation of a letter of consent from affected property owners if determined necessary by County of Orange Director of Planning & Development Services		Each PA
525		EIR 589	SC 4.4-4	Prior to the issuance of grading permits	Geology and Soils (cont.):		Geology and Soils (cont.):	Prior to issuance of grading permits, the ~~Manager of Subdivision and Grading~~ **Manager OC Planned Communities** shall determine that the proposed grading is consistent with the grading depicted within the approved planning application. (County Standard Condition G09)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Approval of grading plan		Each PA
526		EIR 589	SC 4.4-5	Prior to the issuance of building permits	Geology and Soils (cont.):		Geology and Soils (cont.):	The proposed development shall be designed in compliance with the Uniform Building Code (UBC), accepted industry standards, and the County's earthquake safety Municipal Code requirements.	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verification of design development compliance with the UBC and Municipal Code requirements		Each PA
527		EIR 589	SC 4.5-1	Prior to recordation of a Subdivision Map or issuance of a Grading Permit, whichever comes first	Drainage Study:		Drainage Study:	Prior to the recordation of a subdivision map (except maps for financing and conveyance purposes only) or prior to the issuance of any grading permits, whichever comes first, the following drainage studies shall be submitted to and approved by the Manager, Subdivision and Grading: (County Standard Condition D01a)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of satisfactory of drainage study		Each PA

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527.1		EIR 589	SC 4.5-1 (cont.)	See above	Drainage Study (cont.):		Drainage Study (cont.):	A. A drainage study of the project including diversions, off-site areas that drain onto and/or through the project, and justification of any diversions; and B. When applicable, a drainage study evidencing that proposed drainage systems will not overload existing storm drains; and C. Detailed drainage studies indicating how the project grading, in conjunction with the drainage conveyance systems including applicable swales, channels, street flows, catch basins, storm drains, and flood water retarding, will allow building pads to be safe from inundation from rainfall runoff which may be expected from all storms up to and including the theoretical 100-year flood. (County Standard Condition D01a)	See above	See above		Each PA
528		EIR 589	SC 4.5-2	Prior to recordation of a Subdivision Map or Issuance of a Grading Permit, whichever comes first	Drainage Improvements:		Drainage Improvements:	A. Prior to the recordation of a subdivision map (except maps for financing and conveyance purposes only) or prior to the issuance of any grading permits, whichever comes first, the applicant shall in a manner meeting the approval of the Manager, Subdivision and Grading: (County Standard Condition D02a)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Approval of storm drain drainage plans and offer(s) of dedication, if necessary		Each PA
528.1		EIR 589	SC 4.5-2 (cont.)	See above	Drainage Improvements (cont.):		Drainage Improvements (cont.):	1) Design provisions for surface drainage; 2) Design all necessary storm drain facilities extending to a satisfactory point of disposal for the proper control and disposal of storm runoff; and 3) Dedicate the associated easements to the County of Orange, if determined necessary. (County Standard Condition D02a)	See above	See above		Each PA

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529		EIR 589	SC 4.5-2 (cont.)	Prior to recordation of a Subdivision Map or Issuance of a Certificate of Use and Occupancy, whichever comes first	Drainage Improvements (cont.):		Drainage Improvements (cont.):	B. Prior to the recordation of a subdivision map (except maps for financing and conveyance purposes only) or prior to the issuance of any certificates of use and occupancy, whichever occurs first, said improvements shall be constructed in a manner meeting the approval of the Manager, Construction. (County Standard Condition D02a)	~~County of Orange Manager of Inspection,~~ **Manager, OC Inspection Division**	Verification of construction of drainage improvement		Each PA
530		EIR 589	SC 4.5-3	Prior to the issuance of Grading Permits	Drainage Improvements (cont.):		Drainage Improvements (cont.):	A. Prior to the issuance of any grading permits, the applicant shall in a manner meeting the approval of the Manager, Subdivision and Grading: (County Standard Condition D02b)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of satisfactory drainage plans		Each PA
530.1		EIR 589	SC 4.5-3 (cont.)	See above	Drainage Improvements (cont.):		Drainage Improvements (cont.):	1) Design provisions for surface drainage; and 2) Design all necessary storm drain facilities extending to a satisfactory point of disposal for the proper control and disposal of storm runoff; and 3) Dedicate the associated easements to the County of Orange, if determined necessary. (County Standard Condition D02b)	See above	See above		Each PA
531		EIR 589	SC 4.5-3 (cont.)	Prior to the issuance of Certificates of Use and Occupancy	Drainage Improvements (cont.):		Drainage Improvements (cont.):	B. Prior to the issuance of any certificates of use and occupancy, said improvements shall be constructed in a manner meeting the approval of the Manager, Construction. (County Standard Condition D02b)	~~County of Orange Manager of Inspection,~~ **Manager, OC Inspection Division**	Verification of installation of drainage improvement		Each PA
532		EIR 589	SC 4.5-4	Prior to the recordation of a Subdivision Map (except maps for financing and conveyance purposes only)	Master Plan of Drainage:		Master Plan of Drainage:	Prior to the recordation of a subdivision map (except maps for financing and conveyance purposes only), the subdivider shall participate in the applicable Master Plan of Drainage in a manner meeting the approval of the Manager, Subdivision and Grading, including payment of fees and the construction (or provide	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verification of participation in Master Plan of Drainage (fees and/or improvements)	See guidance above related to Item No. 30.	Each PA

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								evidence of financial security such as bonding) of the necessary facilities. (County Standard Condition D04b)				
533		EIR 589	SC 4.5-5	Prior to the recordation of a Subdivision Map	Subordination of Easements:		Subordination of Easements:	Prior to the recordation of a subdivision map (except maps for financing and conveyance purposes only), the subdivider shall not grant any easements over any property subject to a requirement of dedication or irrevocable offer to the County of Orange or the Orange County Flood Control District, unless such easements are expressly made subordinate to the easements to be offered for dedication to the County. Prior to granting any of said easements, the subdivider shall furnish a copy of the proposed easement to the Manager, Subdivision and Grading, for review and approval. (County Standard Condition D06b)	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (Orange County Flood Control District and Santa Margarita Water District)	Verification that any granted easements are subordinate to easements offered to County and provision of copy of said easement(s)	Except in those cases where the County of Orange and the public entity grantee have previously mutually agreed upon conditions to coexist within the easement area.	Each PA
534		EIR 589	SC 4.5-5 (cont.)	See above	Subordination of Easements (cont.):		Subordination of Easements (cont.):	The Santa Margarita Water District would restore other improvements or facilities located within the easement, if it has consented to the location of such improvements or facilities to the extent that the exercise of its rights in connecting with the easement impacts other improvements of facilities located within the easement; however, in no event shall Santa Margarita Water District be responsible for the cost of relocating its facilities in event of conflicts with such improvements or facilities. (County Standard Condition D06b)	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (Orange County Flood Control District and Santa Margarita Water District)	See above	Except in those cases where the County of Orange and the public entity grantee have previously mutually agreed upon conditions to coexist within the easement area.	Each PA
535		EIR 589	SC 4.5-6	Prior to County of Orange acceptance of improvements as identified by separate agreement ~~the~~	Regional Facility Improvements:		Regional Facility Improvements:	Prior to County of Orange acceptance of improvements as identified by separate agreement the recordation of a subdivision map, the applicant shall improve Regional	~~County of Orange Director of Planning & Development Services~~ **Director, OC**	Verification of construction and/or offer(s) of dedication for flood control improvements		Each PA

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				~~recordation of a Subdivision Map~~				Facility ~~prior to~~ construction (or evidence of financial security, such as bonding) of _____, an IOD shall be recorded offering said improvements and dedicate right-of-way to the Orange County Flood Control District in a manner meeting the approval of the Manager, Subdivision and Grading. County of Orange to accept IOD upon satisfactory completion of improvements. (County Standard Condition D07b, modified)	~~County~~ Planning (Orange County Flood Control District and Santa Margarita Water District)			
536		EIR 589	SC 4.5-7	Prior to the recordation of a Subdivision Map	Runoff Management Plan:		Runoff Management Plan:	Prior to the issuance of any grading permits, applicant shall submit a Runoff Management Plan (RMP) to the Manager, Subdivision and Grading for review and approval. (County Standard Condition D10)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of satisfactory Runoff Management Plan		Each PA
537		EIR 589	SC 4.5-8	Prior to the recordation of a Subdivision Map or the issuance of any Grading of Building Permit, whichever comes first	Water Quality Management Plan:		Water Quality Management Plan:	Prior to the recordation of any final subdivision map (except those maps for financing or conveyance purposes only) or the issuance of any grading or building permit (whichever comes first), the applicant shall submit for review and approval by the Manager, Inspection Services Division, a Water Quality Management Plan (WQMP) specifically identifying Best Management Practices (BMPs) that will be used onsite to control predictable pollutant runoff. This WQMP shall identify, at a minimum, the routine structural and non-structural measures specified in the current Drainage Area Management Plan (DAMP). The WQMP may include one or more of the following: (County Standard Condition WQ01)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of satisfactory Water Quality Management Plan		Each PA

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537.1		EIR 589	SC 4.5-8 (cont.)	See above	Water Quality Management Plan (cont.):		Water Quality Management Plan (cont.):	• Address existing water quality and/or watershed programs available for the project); • Address Site Design BMPs (as applicable) such as minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or "zero discharge" areas, and conserving natural areas; • Include the applicable Routine Source Control BMPs as defined in the DAMP. (County Standard Condition WQ01)	See above	See above		Each PA
538		EIR 589	SC 4.5-8 (cont.)	See above	Water Quality Management Plan (cont.):		Water Quality Management Plan (cont.):	Demonstrate how surface runoff and subsurface drainage shall be managed and directed to the nearest acceptable drainage facility (as applicable), via sump pumps if necessary. (Standard Condition of Approval, WQ03)	See above	See above		Each PA
539		EIR 589	SC 4.5-9	Prior to the issuance of a Certificate of Use and Occupancy	Compliance with the WQMP:		Compliance with the WQMP:	Prior to the issuance of a certificate of use and occupancy, the applicant shall demonstrate compliance with the WQMP in a manner meeting the satisfaction of the Manager, Inspection Services Division, including: • Demonstrate that all structural Best Management Practices (BMPs) described in the project's WQMP have been implemented, constructed and installed in conformance with approved plans and specifications; • Demonstrate that the applicant has complied with all non-structural BMPs described in the project's WQMP; • Submit for review and approval an Operations and Maintenance (O&M) Plan for all structural BMPs for attachment to the WQMP;	~~County of Orange Manager of Building Inspection~~, **Manager, OC Inspection Division**	Verification of compliance with Water Quality Management Plan		Each PA

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539.1		EIR 589	SC 4.5-9 (cont.)	See above	Water Quality Management Plan (cont.):		Water Quality Management Plan (cont.):	• Demonstrate that the project's approved WQMP (with attached O&M Plan) are available for each of the incoming occupants; • Agree to pay for a Special Investigation from the County of Orange for a date (12) twelve months after the issuance of a Certificate of Use and Occupancy for the project to verify compliance with the approved WQMP and O&M Plan; and (County Standard Condition WQ03)	See above	See above		Each PA
539.2		EIR 589	SC 4.5-9 (cont.)	See above	Water Quality Management Plan (cont.):		Water Quality Management Plan (cont.):	• Demonstrate that the applicant has agreed to and recorded one of the following: 1) the CC&R's (that must include the approved WQMP and O&M Plan) for the project Home Owner's Association; 2) a water quality implementation agreement that has the approved WQMP and O&M Plan attached; or 3) the final approved Water Quality Management Plan (WQMP) and Operations and Maintenance (O&M) Plan. (County Standard Condition WQ03)	See above	See above		Each PA
540		EIR 589	SC 4.5-10	Prior to the issuance of any Grading or Building Permits	Stormwater Pollution Prevention Plan.		Stormwater Pollution Prevention Plan.	Prior to the issuance of any grading or building permits, the applicant shall demonstrate compliance under California's General Permit for Stormwater Discharges Associated with Construction Activity by providing a copy of the Notice of Intent (NOI) submitted to the State Water Resources Control Board and a copy of the subsequent notification of the issuance of a Waste Discharge Identification (WDID) Number or other proof of filing in a manner meeting the satisfaction of the Manager, Building Permit Services. Projects subject to this requirement shall prepare and implement a Stormwater Pollution Prevention Plan	~~County of Orange Manager of Building Inspection~~ **Manager, OC Inspection Division** (Regional Water Quality Control Board)	Provision of Notice of Intent and verification of a copy of the Storm Water Pollution Prevention Plan (SWPPP); at the project site		Each PA

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								(SWPPP). A copy of the current SWPPP shall be kept at the project site and be available for County review on request. (County Standard Condition WQ04)				
541		EIR 589	SC 4.5-11	Prior to the issuance of any Grading or Building Permits	Erosion and Sediment Control Plan.		Erosion and Sediment Control Plan.	Prior to the issuance of any grading or building permit, the applicant shall submit a Erosion and Sediment Control Plan (ESCP) in a manner meeting approval of the Manager, Building Permit Services, to demonstrate compliance with local and state water quality regulations for grading and construction activities. The ESCP shall identify how all construction materials, wastes, grading or demolition debris, and stockpiles of soil, aggregates, soil amendments, etc. shall be properly covered, stored, and secured to prevent transport into local drainages or coastal waters by wind, rain, tracking, tidal erosion or dispersion. The ESCP shall also describe how the applicant will ensure that all BMPs will be maintained during construction of any future public right-of-ways. A copy of the current ESCP shall be kept at the project site and be available for County review on request. (County Standard Condition WQ05)	~~County of Orange Manager of Building Permits,~~ **Manager, Permit Services** (Building Plan Check)	Submittal of satisfactory Erosion and Sediment Control Plan (ESCP); verification of copy of ESCP at project site		Each PA
542		EIR 589	SC 4.5-12	Prior to recordation of a subdivision map (except for financing purposes) or issuance of any grading permit or building permit, whichever comes first	Development Within Floodplain.		Development Within Floodplain.	Prior to the recordation of a subdivision map (except maps for financing and conveyance purposes only) or the issuance of any grading or building permits, whichever occurs first, within the FP-2 Zoning District, the applicant shall submit all of the necessary documents to the Federal Emergency Management Agency (FEMA) to receive a Conditional Letter of Map Revision (CLOMR) of the Flood Insurance Rate Map (FIRM). Concurrently,	~~County of Orange Director of Planning & Development Services,~~ **Director, OC Planning**	Submittal of a CLOMR and three sets of calculations	Cleared per transmittal of CLOMR to FEMA on January 29th, 2007 (Determine whether approval is for PA1 only, or for entire Ranch Plan PC)	Each PA

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								the applicant shall submit to the Manager, Subdivision and Grading, three (3) sets of the calculations and plans showing the method of satisfying FEMA and FP-2 Zoning District Regulations, all in a manner meeting the approval of the Manager, Subdivision and Grading. (County Standard Condition D08A)				
543		EIR 589	SC 4.6-1	Prior to the approval of a Tentative Tract Map for Urban Activity Center development	Transportation Demand Management:		Transportation Demand Management:	As a part of the submittal of a Tentative Tract Map for an Urban Activity Center development, the project applicant shall submit a Transportation Demand Management (TDM) program consistent with the requirements of the County of Orange TDM Ordinance.	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of satisfactory Transportation Demand Management Plan	TDM Ordinance (incorporated as Section 7-9-143 of the Zoning Code) is only applicable to uses exceeding 100 employees.	Each PA
544		EIR 589	SC 4.6-2	Prior to the recordation of a Subdivision Map	Vehicular Access Rights:		Vehicular Access Rights:	Prior to the recordation of a subdivision map, the subdivider shall place notes on the final map which release and relinquish vehicular access rights to all arterial highways to the County of Orange, except for access locations approved by the County of Orange, in a manner meeting the approval of the Manager, Subdivision and Grading. (County Standard Condition T01)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verification of notes on the final map which release and relinquish vehicular access rights to all arterial highways to the County of Orange except for access locations approved by the County of Orange	Note shall state: "Rancho Mission Viejo or assigns hereby release and relinquish vehicular access rights to all arterial highways to the County of Orange, except for access locations approved by the County of Orange"	Each PA
545		EIR 589	SC 4.6-3	Prior to the recordation of a Subdivision Map	Private Street Improvements:		Private Street Improvements:	Prior to the recordation of a subdivision map, the subdivider shall place a note on the map, in a manner that meets the approval of the Manager, Subdivision and Grading Services, that states: "The private streets constructed within this map shall be owned, operated and maintained by the developer, successors or assigns. The County of Orange shall have no responsibility therefore unless pursuant to appropriate sections of the Streets and Highways Code of the State of California, the said private streets have been	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verification of a note on the Subdivision Map	Note shall make statement listed in quotations in condition.	Each PA

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								accepted into the County Road System by appropriate resolution of the Orange County Board of Supervisors. (County Standard Condition T02)				
546		EIR 589	SC 4.6-4	Prior to the recordation of a Subdivision Map	Street Improvements ~~(cont.)~~:		Street Improvements ~~(cont.)~~:	Prior to the recordation of a subdivision map, the subdivider shall design and construct (or provide evidence of financial security, such as bonding) the following improvements in accordance with plans and specifications meeting the approval of the Manager, Subdivision and Grading: (County Standard Condition T04)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of satisfactory improvements and utility plans with verification of subsequent construction/installation of improvements	If applicable, bonding may substitute for construction of each of the required improvements.	Each PA
546.1		EIR 589	SC 4.6-4 (cont.)	See above	Street Improvements (cont.):		Street Improvements (cont.):	A. Streets, bus stops, on-road bicycle trails, street names, signs, striping and stenciling. (County Standard Condition T04)	See above	See above	See above	Each PA
546.2		EIR 589	SC 4.6-4 (cont.)	See above	Street Improvements (cont.):		Street Improvements (cont.):	B. The water distribution system and appurtenances shall also conform to the applicable laws and adopted regulations enforced by the County Fire Chief. (County Standard Condition T04)	See above	See above	See above	Each PA
546.3		EIR 589	SC 4.6-4 (cont.)	See above	Street Improvements (cont.):		Street Improvements (cont.):	C. Underground utilities (including gas, cable, electrical and telephone), streetlights, and mailboxes. (County Standard Condition T04)	See above	See above	See above	Each PA
547		EIR 589	SC 4.6-5	Prior to the issuance of Building Permits	Major Thoroughfare and Bridge Fee Programs:		Major Thoroughfare and Bridge Fee Programs:	Prior to the issuance of building permits, the applicant shall pay fees for the Major Thoroughfare and Bridge Fee Program for the Foothill/Eastern Transportation Corridor, in a manner meeting the approval of the Manager, Subdivision and Grading. (County Standard Condition T05)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verification of payment of fees for the Major Thoroughfare and Bridge Fee Program		Each PA

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548		EIR 589	SC 4.6-6	Prior to the issuance of Grading Permits	Sight Distance:		Sight Distance:	Prior to issuance of grading permits, the applicant shall provide adequate sight distance per Standard Plan 1117 at all street intersections, in a manner meeting the approval of the Manager, Subdivision and Grading. The applicant shall make all necessary revisions to the plan to meet the sight distance requirement such as removing slopes or other encroachments from the limited use area in a manner meeting the approval of the Manager, Subdivision and Grading Services. (Standard Condition of Approval T07)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Approved grading plans verifying adequate sight distance		Each PA
549		EIR 589	SC 4.6-7	Prior to the recordation of a Subdivision Map	Traffic Signal Conduit:		Traffic Signal Conduit:	Prior to the recordation of a subdivision map, the subdivider shall install (or provide evidence of financial security, such as bonding, that) all underground traffic signal conduits (e.g., signals, phones, power, loop detectors, etc.) and other appurtenances (e.g., pull boxes, etc.) needed for future traffic signal construction, and for future interconnection with adjacent intersections, all in accordance with plans and specifications meeting the approval of the Manager, Subdivision and Grading. (County Standard Condition T08)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Approved traffic signal plans with verification of subsequent installation	If applicable, bonding may substitute for construction of each of the required improvements.	Each PA
550		EIR 589	SC 4.6-8	Prior to the recordation of a Subdivision Map or prior to the issuance of Building Permits, whichever occurs first	Internal Circulation:		Internal Circulation:	A. Prior to the recordation of a subdivision map or the issuance of any building permits, whichever occurs first, the subdivider shall provide plans and specifications meeting the approval of the Manager, Subdivision and Grading, for the design of the following improvements: (County Standard Condition T12)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of satisfactory street improvement plans		Each PA

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550.1		EIR 589	SC 4.6-8 (cont.)	See above	Internal Circulation (cont.):		Internal Circulation (cont.):	1) Entrance to the site to emphasize that the development is private drive system. (County Standard Condition T12)	See above	See above		Each PA
550.2		EIR 589	SC 4.6-8 (cont.)	See above	Internal Circulation (cont.):		Internal Circulation (cont.):	2) Entrance to the site to emphasize that the development is private by use of signs and other features. (Standard Condition of Approval T12)	See above	See above		Each PA
550.3		EIR 589	SC 4.6-8 (cont.)	Prior to the recordation of Subdivision Map.	Internal Circulation (cont.):		Internal Circulation (cont.):	B. Prior to the recordation of a subdivision map, the applicant shall construct (or provide evidence of financial security, such as bonding) the above improvements in a manner meeting the approval of the Manager, Construction. (County Standard Condition T12)	~~County of Orange Manager of Inspection,~~ **Manager, OC Inspection Division**	Verification of improvements' construction in SC 4.6-8A	If applicable, bonding may substitute for construction of each of the required improvements.	Each PA
550.4		EIR 589	SC 4.6-8 (cont.)	Prior to the issuance of Building Permits	Internal Circulation (cont.):		Internal Circulation (cont.):	C. Prior to the issuance of any building permits, the subdivider shall provide plans meeting the approval of the Manager, Subdivision & Grading, for the design of the internal pedestrian circulation system within the development. (County Standard Condition T12)	~~County of Orange Director of Planning & Development Services,~~ **Director, OC Planning**	Submittal of satisfactory internal pedestrians circulation plans		Each PA
551		EIR 589	SC 4.6-9	Prior to the recordation of a Subdivision Map	Traffic Signal Maintenance Easement:		Traffic Signal Maintenance Easement:	Prior to the recordation of a subdivision map, the subdivider shall dedicate a signal maintenance easement to the County of Orange at the project site access, in a manner meeting the approval of the Manager, Subdivision and Grading. (County Standard Condition T13b)	~~County of Orange Director of Planning & Development Services,~~ **Director, OC Planning**	Submittal of offer(s) of dedication for signal maintenance easement(s)		Each PA
552		EIR 589	SC 4.6-10	Prior to the recordation of a Subdivision Map	Traffic Signal Installation:		Traffic Signal Installation:	Prior to the recordation of a subdivision map, the subdivider shall design and construct/provide a cash deposit of __ % of the cost of / /enter into an agreement with the County of Orange, accompanied by financial security, for the cost of __ % of) a traffic signal at the intersection of ___ and ___, in a manner meeting the approval of the Manager, Subdivision and Grading.	~~County of Orange Director of Planning & Development Services,~~ **Director, OC Planning**	Verification of approved street improvement plans with subsequent installation of improvements or enter into agreement with County for construction (with appropriate financial security)	If applicable, bonding may substitute for construction of each of the required improvements.	Each PA

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							(County Standard Condition T14b)					
553		EIR 589	SC 4.6-11	Prior to the recordation of a Subdivision Map	Access Easement for Commercial Centers:		Access Easement for Commercial Centers:	Prior to the recordation of a subdivision map, the applicant shall ~~demonstrate~~ that any applicable ~~delineate on the subdivision map a~~ two way reciprocal access and parking easements are in effect to all parcels within the ~~map and place a note on the final map reserving the easement~~ for the benefit of all parcels on the map, in a manner meeting the approval of the Manager, Subdivision and Grading. (County Standard Condition T15)	~~County of Orange Director of Planning & Development Services~~ Director, OC Planning	Verification of note on map reserving reciprocal parking and access	Only applicable to subdivision maps which include lots to be developed as commercial centers.	Each PA
554		EIR 589	SC 4.6-12	Prior to the recordation of a Subdivision Map	Traffic Study:		Traffic Study:	Prior to the recordation of a subdivision map, the applicant shall submit a traffic study of the development for review and approval by the Manager, Subdivision and Grading, in accordance with the Growth Management Plan, Transportation Implementation Manual. The applicant shall retain a traffic engineer licensed in the State of California to perform the traffic study. (County Standard Condition T16)	~~County of Orange Director of Planning & Development Services~~ Director, OC Planning	Submittal of satisfactory traffic study	Traffic study to be reviewed by Planned Community Division of OC Public Works	Each PA
554.1		EIR 589	SC 4.6-13	Prior to approval of subdivision map within 1,000 feet of the center line of the conceptual Crown Valley Parkway	MPAH Designation of Crown Valley Parkway:		MPAH Designation of Crown Valley Parkway:	Prior to the approval of any subdivision map (except for financing purposes) for the Ranch Plan development within 1,000 feet of the center line of the conceptual Crown Valley Parkway as shown on the current (as of the date of the Ranch Plan GPA/ZC approval) Master Plan of Arterial Highway (MPAH), between Antonio Parkway and the Foothill Transportation Corridor (FTC), the Director, Resource & Development Management Department (RDMD), County of Orange in consultation with Manager Programming/Planning of Orange County Transportation Authority	~~County of Orange Director of Planning~~ Director, OC Planning & Development Services (OCTA)	Finding being made in conjunction with subdivision map review and approval	While Crown Valley Parkway remains on the MPAH, there are significant geotechnical and habitat issues associated with the extension which will require additional review.	PA2

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								(or shall make a finding that said subdivision map does not preclude implementation of Crown Valley Parkway as an MPAH facility.				
554.2		EIR 589	SC 4.6-14	Prior to recordation of the first tract map (except for financing purposes) for Planning Areas 2, 3, or 5	TCA Agreement:		TCA Agreement:	Prior to recordation of the first tract map (except for financing purposes) for Planning Areas 2, 3, or 5 in the Ranch Plan development, the applicant shall enter into an agreement with the Foothill/Eastern Transportation Corridor Agencies (TCA) to address right-of-way, cost, phasing, implementation and roles and responsibilities relating to all roadway connections to and/or crossings of the SR-241 extension within the Ranch Plan, and/or funding/phasing/ construction of other roadways (i.e., F Street) that are needed in the event the extension of SR-241 does not occur. The agreement between the applicant and the TCA shall also be reviewed and approved by the Director, RDMD, County of Orange, for consistency with SCRIP/Development Agreement phasing/milestone objectives.	~~County of Orange Director of RDMD~~ **Director, OC Planning** and TCA	Evidence of agreement between applicant and TCA	In accordance with Transportation Improvement Phasing Plan for SCRIP.	PA2, PA3 and PA5
555		EIR 589	SC 4.7-1	Prior to the issuance of a grading permit	Fugitive Dust:		Fugitive Dust:	All construction contractors shall comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 403, Fugitive Dust, and Rule 402, Nuisance. All grading (regardless of acreage) shall apply best available control measures for fugitive dust in accordance with Rule 403. To ensure that the project is in full compliance with applicable SCAQMD dust regulations and that there is no nuisance impact off the site, the contractor would implement each of the following:	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verification of compliance with Rule 403 and Rule 402		Each PA

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555.1		EIR 589	SC 4.7-1 (cont.)	See above	Fugitive Dust (cont.):		Fugitive Dust (cont.):	a. Water active grading areas at least 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from traveling more than 100 feet in any direction.	See above	See above		Each PA
555.2		EIR 589	SC 4.7-1 (cont.)	See above	Fugitive Dust (cont.):		Fugitive Dust (cont.):	b. Apply chemical stabilizers to disturbed surface areas (i.e., completed grading areas) within five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.	See above	See above		Each PA
555.3		EIR 589	SC 4.7-1 (cont.)	See above	Fugitive Dust (cont.):		Fugitive Dust (cont.):	c. Water excavated soil piles hourly or cover with temporary coverings.	See above	See above		Each PA
555.4		EIR 589	SC 4.7-1 (cont.)	See above	Fugitive Dust (cont.):		Fugitive Dust (cont.):	d. Water exposed surfaces at least twice a day under calm conditions. Water as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.	See above	See above		Each PA
555.5		EIR 589	SC 4.7-1 (cont.)	See above	Fugitive Dust (cont.):		Fugitive Dust (cont.):	e. Wash mud-covered tires and under-carriages of trucks leaving construction sites.	See above	See above		Each PA
555.5		EIR 589	SC 4.7-1 (cont.)	See above	Fugitive Dust (cont.):		Fugitive Dust (cont.):	f. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing from project sites.	See above	See above		Each PA
556		EIR 589	SC 4.7-2	Prior to issuance of a grading permit	Construction - ROC and NOX Emissions:		Construction - ROC and NOX Emissions:	The applicant shall comply with the following measures, as feasible, to reduce NO_X and ROC from heavy equipment.	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Place as general notes on approved grading plan		Each PA
556.1		EIR 589	SC 4.7-2 (cont.)	See above	Construction Emissions:		Construction Emissions:	a. Turn equipment off when not in use for more than five minutes.	See above	See above		Each PA

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556.2		EIR 589	SC 4.7-2 (cont.)	See above	Construction Emissions (cont.):		Construction Emissions (cont.):	b. Maintain equipment engines in good condition and in proper tune as per manufacturers' specifications.	See above	See above		Each PA
556.3		EIR 589	SC 4.7-2 (cont.)	See above	Construction Emissions (cont.):		Construction Emissions (cont.):	c. Lengthen the construction period during smog season (May through October) to minimize the number of vehicles and equipment operating at the same time.	See above	See above		Each PA
557		EIR 589	SC 4.8-1	Prior to the issuance of grading permits	Hours of Construction:		Hours of Construction:	During construction, the project applicant shall ensure that all noise generating activities be limited to the hours of 7 a.m. to 8 p.m. on weekdays and Saturdays. No noise generating activities shall occur on Sundays and holidays in accordance with the County of Orange Noise Ordinance.	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	General note on approved grading plan		Each PA
558		EIR 589	SC 4.8-2	Prior to the issuance of grading permits	Construction Noise:		Construction Noise:	A. Prior to the issuance of any grading permits, the project proponent shall produce evidence acceptable to the Manager, Building Permits Services, that: (County Standard Condition N10)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	General note on approved grading plan		Each PA
558.1		EIR 589	SC 4.8-2 (cont.)	See above	Construction Noise (cont.):		Construction Noise (cont.):	(1) All construction vehicles or equipment, fixed or mobile, operated within 1,000' of a dwelling shall be equipped with properly operating and maintained mufflers. (County Standard Condition N10)	See above	See above		Each PA
558.2		EIR 589	SC 4.8-2 (cont.)	See above	Construction Noise (cont.):		Construction Noise (cont.):	(2) All operations shall comply with Orange County Codified Ordinance Division 6 (Noise Control). (County Standard Condition N10)	See above	See above		Each PA
558.3		EIR 589	SC 4.8-2 (cont.)	See above	Construction Noise (cont.):		Construction Noise (cont.):	(3) Stockpiling and/or vehicle staging areas shall be located as far as practicable from dwellings. (County Standard Condition N10)	See above	See above		Each PA

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558.4		EIR 589	SC 4.8-2 (cont.)	See above	Construction Noise (cont.):		Construction Noise (cont.):	By noting this note above or in similar format, appropriately numbered and coordinated with other notations on the front sheet of the project's permitted grading plans, will be considered as adequate evidence of compliance with this condition. (County Standard Condition N10)	See above	See above		Each PA
559		EIR 589	SC 4.8-3	See below	Sound Attenuation:		Sound Attenuation:	The applicant shall sound attenuate all residential lots and dwellings against present and projected noise (which shall be the sum of all noise impacting the project) so that the composite interior standard of 45 dBA CNEL for habitable rooms and a source specific exterior standard of 65 dBA CNEL for outdoor living areas is not exceeded. The applicant shall provide a report prepared by a County-certified acoustical consultant, which demonstrates that these standards will be satisfied in a manner consistent with Zoning Code Section 7-9-137.5, as follows: (County Standard Condition N01)	~~County of Orange Director of Planning & Development Services and County of Orange Manager of Building Permits Services~~, **Director, OC Planning and Manager, Permit Services** (Building Plan Check)	Submittal of satisfactory acoustical analysis	Staff may determine that no attenuation is necessary, and no action is required (as occurred in PA1). In such a case a "not applicable" memo is to be prepared. Applicant and County staff to address AC units in side yards as soon as possible.	Each PA
559.1		EIR 589	SC 4.8-3 (cont.)	Prior to the recordation of a subdivision map or prior to the issuance of grading permits	Sound Attenuation (cont.):		Sound Attenuation (cont.):	a. Prior to the recordation of a subdivision map or prior to the issuance of grading permits, as determined by the Manager, Building Permits Services, the applicant shall submit an acoustical analysis report to the Manager, Building Permits Services, for approval. The report shall describe in detail the exterior noise environment and preliminary mitigation measures. Acoustical design features to achieve interior noise standards may be included in the report in which case it may also satisfy Condition B below. (County Standard Condition N01)	See above	See above		Each PA

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559.2		EIR 589	SC 4.8-3 (cont.)	Prior to the issuance of any building permits for residential construction	Sound Attenuation (cont.):		Sound Attenuation (cont.):	b. Prior to the issuance of any building permits for residential construction, the applicant shall submit an acoustical analysis report describing the acoustical design features of the structures required to satisfy the exterior and interior noise standards to the ~~Manager, Building Permits~~ Services, for approval along with satisfactory evidence which indicates that the sound attenuation measures specified in the approved acoustical report have been incorporated into the design of the project. (County Standard Condition N01)	~~County of Orange Director of Planning & Development Services and County of Orange Manager of Building Permits Services~~, **Director, OC Planning and Manager, Permit Services** (Building Plan Check)	Submittal of satisfactory acoustical analysis		Each PA
559.3		EIR 589	SC 4.8-3 (cont.)	See above	Sound Attenuation (cont.):		Sound Attenuation (cont.):	c. Prior to the issuance of any building permits, the applicant shall show all freestanding acoustical barriers on the project's plot plan illustrating height, location and construction in a manner meeting the approval of the Manager, Building Permits Services. (County Standard Condition N01)	See above	See above		Each PA
560		EIR 589	SC 4.8-4	Prior to the issuance of certificates of use and occupancy	Multi-Family Residential Development:		Multi-Family Residential Development:	Prior to the issuance of any certificates of use and occupancy, the applicant shall perform field testing in accordance with Title 24 Regulations to verify compliance with FSTC and FIIC standards if determined necessary by the Manager, Building Inspection Services. In the event such a test was previously performed, the applicant shall provide satisfactory evidence and a copy of the report to the Manager, Building Inspection Services, as a supplement to the previously required acoustical analysis report. (County Standard Condition N09)	~~County of Orange Manager of Building Inspection Services~~, **Manager, OC Inspection Division**	Verification of field testing in accordance with Title 24 Regulations to verify compliance with FSTC and FIIC standards or a copy of a previous test		Each PA

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561		EIR 589	SC 4.8-5	Prior to the issuance of building permits	Non-Residential Development:		Non-Residential Development:	Prior to the issuance of any building permits, if the interior noise level exceeds the exterior noise level, the applicant shall sound attenuate all nonresidential structures against the combined impact of all present and projected noise from exterior noise sources to meet the interior noise standard as specified in the Noise Element and Land Use/Noise Compatibility Manual. (County Standard Condition N02)	~~County of Orange~~ ~~Manager of Building Permits~~, **Manager, Permit Services** (Building Plan Check)	Submittal of satisfactory acoustical analysis		Each PA
561.1		EIR 589	SC 4.8-5 (cont.)	See above	Non-Residential Development:		Non-Residential Development:	Prior to the issuance of any building permits, the applicant shall submit to the Manager, Building Permit Services, an acoustical analysis report prepared under the supervision of a County-certified acoustical consultant which describes in detail the exterior noise environment and the acoustical design features required to achieve the interior noise standard and which indicates that the sound attenuation measures specified have been incorporated into the design of the project. (County Standard Condition N02)	See above	See above		Each PA
562		EIR 589	SC 4.8-6	Prior to the issuance of building or grading permits	Noise-Generating Equipment (Non-Residential Projects):		Noise-Generating Equipment (Non-Residential Projects):	Prior to the issuance of any building or grading permits, the applicant shall obtain the approval of the Manager, Building Permits Services of an acoustical analysis report and appropriate plans which demonstrate that the noise levels generated by this project during its operation shall be controlled in compliance with Orange County Codified Ordinance, Division 6 (Noise Control). The report shall be prepared under the supervision of a County-certified Acoustical Consultant and shall describe the noise generation potential of the project during its operation and the noise mitigation measures, if needed, which shall be	~~County of Orange~~ ~~Manager of Building Permits~~, **Manager, Permit Services** (Building Plan Check)	Approved acoustical analysis		Each PA

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								included in the plans and specifications of the project to assure compliance with Orange County Codified Ordinance, Division 6 (Noise Control). (County Standard Condition N08)				
563		EIR 589	SC 4.8-7	Prior to the issuance of certificates of use and occupancy	Transportation Corridor Notification:		Transportation Corridor Notification	Prior to the issuance of certificates of use and occupancy, the developer shall produce evidence to the Manager, Building Inspection Services, that the Department of Real Estate has been notified that the project area is adjacent to a regional transportation corridor. The corridor is expected to be a high capacity, high-speed, limited-access facility for motor vehicles, and will have provisions for bus lanes and other mass transit type facilities. (County Standard Condition N12)	~~County of Orange Manager of Building Inspection Services~~, **Manager, OC Inspection Division**	Submission of evidence that County of Orange Dept. of Real Estate has been notified the project area is adjacent to a regional transportation corridor		Each PA
564		EIR 589	SC 4.10-1	Prior to the issuance of building permits	Public Area Landscaping:		Public Area Landscaping:	The applicant shall install landscaping, equip for irrigation, and improvements on lots in accordance with an approved plan as stated below: (County Standard Condition LA01b)	~~County of Orange Director of Planning & Development Services in consultation with Manager, HBP~~, **Director, OC Planning**	Approved landscaping plan and irrigation plan		Each PA
564.1		EIR 589	SC 4.10-1 (cont.)	See above	Public Area Landscaping:		Public Area Landscaping:	a. Detailed Plan–Prior to the issuance of any building permit(s), the applicant shall submit a detailed landscape plan showing the detailed irrigation and landscaping design to the Manager, Subdivision and Grading for approval, in consultation with the Manager HBP/Program Management. Detailed plans shall show the detailed irrigation and landscaping design and shall take into account the previously approved landscape plan for the Ranch Plan project, the County Standard Plans for landscape areas, adopted plant palette guides,	See above	See above		Each PA

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								applicable standards and specific plan requirements. Water Conservation Measures contained in Board Resolution 90-487 (Water Conservation Measures), and Board Resolution 90-1341 (Water Conservation Implementation Plan). (County Standard Condition LA01b)				
565		EIR 589	SC 4.10-1 (cont.)	Prior to the issuance of final certificates of use and occupancy and the release of financial security	Public Area Landscaping (cont.):		Public Area Landscaping (cont.):	b. Installation Certification: Prior to the issuance of final certificates of use and occupancy and the release of financial security, if any, guaranteeing the landscape improvements, said improvements shall be installed and shall be certified by a licensed landscape architect or licensed landscape contractor, as having been installed in accordance with the approved detailed plans. (County Standard Condition LA01b)	~~County of Orange Director of Planning & Development Services & Manager HBP~~, **Director, OC Planning**	Landscaping and irrigation plan certification from landscape architect		Each PA
566		EIR 589	SC 4.10-1 (cont.)	Prior to the issuance of final certificates of use and occupancy and the release of financial security	Public Area Landscaping (cont.):		Public Area Landscaping (cont.):	b. Installation Certification (cont): The applicant shall furnish said certification, including an irrigation management report for each landscape irrigation system, and any other required implementation report determined applicable, to the Manager, Construction, and the Manager, Building Inspection Services, prior to the issuance of any certificates of use and occupancy. (County Standard Condition LA01b)	~~County of Orange Manager, Construction and Manager, Building Inspection Services,~~ **Manager, OC Inspection Division**	Approved irrigation management report		Each PA
567		EIR 589	SC 4.10-2	Prior to the issuance of precise grading permits	Private Area Landscaping:		Private Area Landscaping:	a. Prior to the issuance of precise grading permits, the applicant shall prepare a detailed landscape plan for privately maintained common areas which shall be reviewed and approved by the Manager, Subdivision and Grading. The plan shall be certified by a licensed landscape architect or a licensed landscape contractor, as required, as	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Approved detailed landscape plan for privately maintained common areas		Each PA

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								taking into account the approved preliminary landscape plan (if any), County Standard Plans for landscape areas, adopted plant palette guides, applicable scenic and specific plan requirements, Water Conservation Measures contained in Board Resolution 90-487 (Water Conservation Measures), and Board Resolution 90-1341 (Water Conservation Implementation Plan). (County Standard Condition LA02b)				
568		EIR 589	SC 4.10-2 (cont.)	Prior to the issuance of certificates of use and occupancy	Private Area Landscaping (cont.):		Private Area Landscaping (cont.):	b. Prior to the issuance of certificates of use and occupancy, applicant shall install said landscaping and irrigation system and shall have a licensed landscape architect or licensed landscape contractor, certify that it was installed in accordance with the approved plan. (County Standard Condition LA02b)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Certification from landscape architect that landscaping and irrigation system in accordance with the approved plan		Each PA
569		EIR 589	SC 4.10-2 (cont.)	Prior to the issuance of certificates of use and occupancy	Private Area Landscaping (cont.):		Private Area Landscaping (cont.):	c. Prior to the issuance of any certificates of use and occupancy, the applicant shall furnish said installation certification, including an irrigation management report for each landscape irrigation system, and any other implementation report determined applicable, to the Manager, Building Inspection Services. (County Standard Condition LA02b)	~~County of Orange Manager, Building Inspection Services~~, **Manager, OC Inspection Division**	Approved irrigation management report for each landscape irrigation system		Each PA
570		EIR 589	SC 4.10-3	Prior to the issuance of building permits	Light and Glare:		Light and Glare:	Prior to issuance of any building permit, the applicant shall demonstrate that all exterior lighting has been designed and located so that all direct rays are confined to the property in a manner meeting the approval of the Manager, Building Permit. (County Standard Condition LG01)	~~County of Orange Manager of Building Permits~~, **Manager, Permit Services** (Building Plan Check)	Approved lighting study/plan	Low voltage lighting: landscape architect is the designer can sign off on the lighting. High voltage lighting: electrical engineer stamp required.	Each PA

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571	172-176 (MM 4.11-3)	EIR 589	SC 4.11-1	Prior to the issuance of any grading permits	Archaeology Grading Observation and Salvage:		Archaeology Grading Observation and Salvage:	Prior to the issuance of a grading permit, the applicant shall provide written evidence to the County of Orange Manager, Subdivision and Grading, that applicant has retained a County-certified archaeologist to observe grading activities and salvage and catalogue Archaeological resources as necessary. The archaeologist shall be present at the pre-grade conference; shall establish procedures for archaeological resource surveillance; and shall establish, in cooperation with the applicant, procedures for temporarily halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts as appropriate. If the archaeological resources are found to be significant, the archaeological observer shall determine appropriate actions, in cooperation with the project applicant, for exploration and/or salvage. (County Standard Condition A04)	~~County of Orange Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ OC Public Works/OC Planning*	Written evidence that a County-certified archaeologist has been retained to observe grading and salvage, and to catalogue archaeological resources	If prior to rough grade (GA permit) applicant has obtained archaeological clearance, no additional review or clearance required if precise grading (GB) permit is in compliance with GA permit.	Each PA
572		EIR 589	SC 4.11-1 (cont.)	Prior to the release of the grading bond	Archaeology Grading Observation and Salvage (cont.):		Archaeology Grading Observation and Salvage (cont.):	Prior to the release of the grading bond, the applicant shall obtain approval of the archaeologist's follow-up report from the Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities. The report shall include the period of inspection, an analysis of any artifacts found and the present repository of the artifacts. Applicant shall prepare excavated material to the point of identification. Applicant shall offer excavated finds for curatorial purposes to the County of Orange, or its designee, on a first refusal basis. (County Standard Condition A04)	~~County of Orange Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ OC Public Works/OC Planning*	Approval of the archaeologist's follow-up report		Each PA

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573		EIR 589	SC 4.11-1 (cont.)	Prior to the release of the grading bond	Archaeology Grading Observation and Salvage (cont.):		Archaeology Grading Observation and Salvage (cont.):	The curation as well as the mitigation and disposition of the resources shall be subject to the approval of the Manager, HBP/Coastal and Historical Facilities. Applicant shall pay curatorial fees if an applicable fee program has been adopted by the Board of Supervisors and such fee program is in effect at the time of presentation of the materials to the County of Orange or its designee, all in a manner meeting the approval of the Manager, HBP/Coastal and Historical Facilities. (County Standard Condition A04)	~~County of Orange Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **OC Public Works/OC Planning***	Verification of payment of curatorial fee if an applicable fee program has been adopted by the Board of Supervisor at the time of presentation		Each PA
574		EIR 589	SC 4.11-2	Prior to the issuance of any grading permits	Paleontology Resource Surveillance:		Paleontology Resource Surveillance:	Prior to the issuance of any grading permit, the project contractor shall provide written evidence to the Manager, Subdivision and Grading, that contractor has retained a County certified paleontologist to observe grading activities and salvage and catalogue fossils as necessary. The paleontologist shall be present at the pre-grade conference, shall establish procedures for paleontological resources surveillance, and shall establish, in cooperation with the contractor, procedures for temporarily halting or redirecting work to permit sampling, identification, and evaluation of the fossils. If the paleontological resources are found to be significant, the paleontologist shall determine appropriate actions, in cooperation with the contractor, which ensure proper exploration and/or salvage. (County Standard Condition A07)	~~County of Orange Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **OC Public Works/OC Planning***	Written evidence that a County-certified archaeologist has been retained to observe grading and salvage, and to catalogue fossils as necessary		Each PA

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575		EIR 589	SC 4.11-2 (cont.)	Prior to the release of the grading bond	Paleontology Resource Surveillance (cont.):		Paleontology Resource Surveillance (cont.):	Prior to release of the grading bond, the contractor shall submit the paleontologist's follow up report for approval by the County Manager, HBP/Coastal and Historical Facilities. The report shall include the period of inspection, stratigraphic and analysis of the fossils found, and the present repository of the fossils. The contractor shall prepare excavated material to the point of identification. The contractor shall offer excavated finds for curatorial purposes to the County of Orange, or its designee, on a first-refusal basis. (County Standard Condition A07)	~~County of Orange Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **OC Public Works/OC Planning***	Approval of the paleontologist's follow-up report		Each PA
576		EIR 589	SC 4.11-2 (cont.)	Prior to the release of the grading bond	Paleontology Resource Surveillance (cont.):		Paleontology Resource Surveillance (cont.):	These actions, as well as final mitigation and disposition of the resources, shall be subject to approval by the HBP/Coastal and Historical Facilities. The contractor shall pay curatorial fees if an applicable fee program has been adopted by the Board of Supervisors, and such fee program is in effect at the time of presentation of the materials to the County of Orange or its designee, all in a manner meeting the approval of the County Manager, HBP/Coastal and Historical Facilities. (County Standard Condition A07)	~~County of Orange Manager, Harbors, Beaches & Parks HBP/Coastal and Historical Facilities~~ **OC Public Works/OC Planning***	Verification of payment of curatorial fee if an applicable fee program has been adopted by the Board of Supervisor at the time of presentation		Each PA
577		EIR 589	SC 4.12-1	Prior to recordation of any applicable subdivision map	Public Park Dedication:		Public Park Dedication:	a. Prior to the recordation of any subdivision map that creates building sites and is immediately adjacent to or contains a public park lot, the subdivider shall make an irrevocable offer of fee dedication for local park purposes to the County of Orange or its designee over Lot(s)_____[1]. The form of the offer shall be suitable for recordation as approved by the Manager, Current Planning Services. Said offer	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Irrevocable offer of fee dedication for local park purposes to the County of Orange	The irrevocable offer of dedication (IOD) may be satisfied per the appropriate designation (notes and delineation) on the subject subdivision map. The IOD will only be applied to portions open to public (i.e. no gated pool areas).	Each PA

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								shall be free and clear of money and all other encumbrances, liens, leases, fees, easements (recorded and unrecorded), assessments and unpaid taxes except those meeting the approval of the Manager, Current Planning Services. (County Standard Condition CP01)				
578		EIR 589	SC 4.12-1 (cont.)	Prior to recordation of any subdivision map				b. The subdivider applicant shall grade (or provide evidence of financial security, such as bonding) Lot(s) _____, the public park site(s), to provide minimum acres of creditable local park land and shall secure the park site(s) against erosion and shall stub out sewer, water, gas, electricity, telephone, storm drain, etc., connections to the property lines. (County Standard Condition CP01)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verify subdivider applicant would grade the public park site(s) to provide minimum acres of creditable local park land	Grading, erosion control, utility stub-outs, etc. would be done in conjunction with park construction. Typically local parks would be constructed by Rancho Mission Viejo.	Each PA
579		EIR 589	SC 4.12-1 (cont.)	Prior to recordation of any subdivision map	Public Park Dedication (cont.):		Public Park Dedication (cont.):	c. The developer, or his assigns, and successors in interest shall maintain the offered park site(s) until such time as the County or its designee accepts the offer of dedication. (County Standard Condition CP01)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verify developer would maintain the offered park site(s) until Orange County accepts the offer of dedication	Verification of maintenance would only be necessary if the County were anticipating acceptance of a local park, which typically does not occur.	Each PA
580		EIR 589	SC 4.12-2	Prior to recordation of an applicable subdivision map which creates building sites	Private Local Park:		Private Local Park:	a. Prior to the recordation of an applicable subdivision map which creates building sites, the subdivider shall make an irrevocable offer to dedicate an easement over Lot(s) ____for private local park purposes to the County of Orange in a form approved by the Manager, the Manager, Current Planning Services. The subdivider shall not grant any other easement over the private park easement which is inconsistent with the local park uses, unless that easement is made subordinate to said local park easement in a manner	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verify subdivider would make an irrevocable offer to dedicate an easement for private local park purposes to the County of Orange	Applicant is only required to establish consistency with the approved March 14, 2007 Ranch Plan Local Park Implement-ation Plan [Hyperlink #27]. This may not require the dedication of parkland within each subdivision map which creates building sites.	Each PA

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								meeting the approval of the Manager, Current Planning Services. (County Standard Condition CP02)				
581		EIR 589	SC 4.12-2 (cont.)	Prior to approval of Site Development Permit ~~recordation of applicable final subdivision map~~	Private Local Park (cont.):		Private Local Park (cont.):	b. Prior to the approval of Site Development Permit ~~recordation of an applicable final subdivision map~~, the subdivider shall submit a preliminary concept plan of the proposed private recreation facilities to the Manager, Current Planning Services, for review and approval. (County Standard Condition CP02, modified)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verify submission of a preliminary concept plan of private recreation facilities for review and approval	Private local parks are to be reviewed and approved in compliance with the approved March 14, 2007 Ranch Plan Community- Wide Local Park Implementation Plan (LPIP) [Hyperlink #27]	Each PA
583		EIR 589	SC 4.12-5	Prior to recordation of final tract map	Recreation Easement for Regional Trail:		Recreation Easement for Regional Trail:	The subdivider shall provide an easement for a recreational trail for riding and hiking trail purposes in accordance with the following: a. Prior to the recordation of an applicable subdivision map, the subdivider shall: (County Standard Condition HP03)	~~County of Orange Manager of Harbors, Beaches & Parks, Program Management~~, **Director, OC Planning**	Verify subdivider would provide an easement for a recreational trail for riding and hiking trail purposes	Subdivider is only required to verify dedication of an easement if the map is associated with a link on the Trail and Bikeways Implementation Plan for the Ranch Plan, [Hyperlink #21] approved 7/18/06. Trails are an allowed activity The underlying owner will be RMV, a conservation easement will be dedicated to The Reserve and a trail easement will be dedicated to the County. In areas where a conservation easement has already been dedicated, USFWS and Reserve approval are required.	Each PA

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583.1		EIR 589	SC 4.12-5 (cont.)	See above	Recreation Easement for Regional Trail:		Recreation Easement for Regional Trail:	1. Dedication of a recreation easement for riding and hiking trail purposes in a location and in a manner meeting the approval of the Manager HBP/Program Manage-ment. The subdivider shall not grant any easement(s) over the property subject to the recreation easement unless such easements are first reviewed and approved by the Manager HBP/Program Management. (County Standard Condition HP03)	~~County of Orange Manager of Harbors, Beach & Parks Program Management in consultation with County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	See above	Subdivider is only required to verify dedication of an easement if the map is associated with a link on the Trail and Bikeways Implementation Plan for the Ranch Plan, [Hyperlink #21] approved 7/18/06. Trails are an allowed activity	Each PA
584		EIR 589	SC 4.12-5 (cont.)	Prior to the issuance of precise grading permits	Recreation Easement for Regional Trail (cont.):		Recreation Easement for Regional Trail (cont.):	2. Design the necessary improvements for the trail, including, but not limited to grading, erosion control, signage, fencing, and a grade-separated crossing, as applicable, in a manner meeting the approval of the Manager HBP/ Program Management, in consultation with the Manager, Subdivision and Grading. Trail design shall also avoid affecting areas known to contain sensitive biological resources as identified in Section 4.9, Biological Resources. (County Standard Condition HP03)	~~County of Orange Manager of Harbors, Beach & Parks Program Management in consultation with County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verify approval of design improvements for the trail by the Manager HBP/ Program Management		Each PA
585		EIR 589	SC 4.12-5 (cont.)	Prior to the issuance of final certificates of use and occupancy	Recreation Easement for Regional Trail (cont.):		Recreation Easement for Regional Trail (cont.):	3. Enter into an agreement, accompanied by financial security, with the County of Orange, to insure the installation of the necessary improvements. (County Standard Condition HP03)	~~County of Orange Manager of Harbors, Beach & Parks Program Management in consultation with County of Orange Manager of Construction~~, **Director, OC Planning in consultation with Manager, OC Inspection Division**	Verify existence of an agreement accompanied by financial security with the County to insure installation of necessary improvements	The underlying owner will be RMV, a conservation easement will be dedicated to The Reserve and a trail easement will be dedicated to the County. In areas where a conservation easement has already been dedicated, USFWS and Reserve approval are required.	Each PA

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586		EIR 589	SC 4.12-5 (cont.)	Prior to the issuance of precise grading permits	Recreation Easement for Regional Trail (cont.):		Recreation Easement for Regional Trail (cont.):	b. Prior to the issuance of precise grading permits, applicant shall obtain approval from the Manager HBP/ Program Management, that the proposed grading provides for and will not interfere with or preclude the installation of the recreational riding and hiking trail. (County Standard Condition HP03)	~~County of Orange Director of Planning & Development Services County of Orange Manager of Harbors, Beach & Parks Program Management~~, **Director, OC Planning**	Verify grading would not interfere with installation of recreational riding and hiking trail		Each PA
587		EIR 589	SC 4.12-5 (cont.)	Prior to issuance of final certificates of use and occupancy and release of financial security	Recreation Easement for Regional Trail (cont.):		Recreation Easement for Regional Trail (cont.):	c. Prior to the issuance of final certificates of use and occupancy and the release of financial security guaranteeing the riding and hiking trail improvements, the applicant shall install the riding and hiking trail improvements in a manner meeting the approval of the Manager HBP/ Program Management, in consultation with the Manager, Construction. (County Standard Condition HP03)	~~County of Orange Manager of Harbors, Beach & Parks Program Management in consultation with County of Orange Manager of Construction~~, **Director, OC Planning in consultation with Manager, OC Inspection Division**	Verify installation of riding and hiking trail improvements meet the approval of the Manager of HBP/Program Management in consultation with the Manager of Construction		Each PA
588		EIR 589	SC 4.14-1	Prior to the recordation of a subdivision map	Hazardous Materials Assessment Report:		Hazardous Materials Assessment Report:	Prior to the recordation of a subdivision map, the subdivider shall submit a "Hazardous Materials Assessment" and a "Disclosure Statement" covering the property (both fee and easement) which will be offered for dedication or dedicated to the County of Orange or the Orange County Flood Control District, for review and approval by the Manager, Subdivision and Grading, in consultation with the Manager, PFRD/ Environmental Resources. (County Standard Condition HM-01)	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Submittal of Hazardous Materials Assessment and Disclosure Statement	Applicant is only required to submit a TDS if land is being dedicated to County of Orange, and then only for the property covered by the dedication.	Each PA

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589		EIR 589	SC 4.14-2	Prior to issuance of a grading and/or building permit	Hazardous Materials:		Hazardous Materials:	Prior to issuance of a grading or building permit, the contractor shall submit to the Fire Chief a list of all hazardous, flammable and combustible liquids, solids or gases to be stored, used or handled on site. These materials shall be classified according to the Uniform Fire Code and a document submitted to the Fire Chief with a summary sheet listing the totals for storage and use for each hazard class. (County Standard Condition FPC11A)	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (OCFA)	Submittal of Hazardous Materials Assessment and Disclosure Statement		Each PA
589.1		EIR 589	SC 4.15-1	Prior to recordation of final tract ~~a subdivision~~ maps (alternatively subdivider may enter into a subdivision improvement agreement with the County	Water Improvement Plans:		Water Improvement Plans:	Prior to the recordation of a subdivision map, the subdivider shall design and construct (or provide evidence of financial security, such as bonding) water distribution system and appurtenances that conform to the applicable laws and adopted regulations enforced by the County Fire Chief, in accordance with plans and specifications meeting the approval of the Manager, Subdivision and Grading. (Added per MMRP attached to 11/8/06 CEQA Resolution 04-290)	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (OCFA)	Approved water improvement plans with subsequent construction of improvement	Applicant must submit one of the following: (1) approved improvement plan consisted with referenced Plan of Works, (2) letters from both SMWD and OCFA indicating sufficient water supply and pressure for Map area, or (3) subdivision improvement agreement with County.	Each PA
590		EIR 589	SC 4.15-2	Prior to recordation of final tract maps for the proposed land development area (alternatively subdivider may enter into a subdivision improvement agreement with the County	Utilities (Electricity Availability Report):		Utilities (Electricity Availability Report):	Prior to recordation of final tract maps for the proposed land development area, the project applicant shall coordinate with SDG&E in the design and implementation of future electrical service and facilities (transmission lines, access road, etc.) within the project study area to ensure that: (1) no notable service disruptions during the extension and upgrading of these services would arise; (2) the nature, design, and timing of electrical system improvements are in accordance with all SDG&E requirements; and (3) the improvements are adequate	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (SDG&E)	Approved Electricity Availability Report	This condition required only if an existing transmission line or access road would potentially be affected by the subject subdivision map.	Each PA

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								to serve the proposed land uses.				
591		EIR 589	SC 4.15-3	Prior to recordation of final tract map	Utilities (SDG&E Transmission Line):		Utilities (SDG&E Transmission Line):	Prior to recordation of final tract maps for the proposed land development area, the project applicant shall coordinate with SDG&E to ensure that no notable disruptions to the existing 138 kV transmission line that extends through the project study area would occur as a result of project implementation.	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (SDG&E)	Verification to ensure that no notable disruptions to the existing 138 kV transmission line that extends through the project study area would occur as a result of project implementation.	This condition required only if an existing 138kv transmission line would potentially be affected by the subject subdivision map.	Each PA
592		EIR 589	SC 4.15-4	Prior to recordation of final tract map	Utilities (SoCal Gas):		Utilities (SoCal Gas):	Prior to recordation of final tract maps for the proposed land development area, the project applicant shall coordinate with SoCalGas in the design and implementation of future natural gas service and facilities within the project study area to ensure that: (1) no notable service disruptions during the extension and upgrading of these services would arise; (2) the nature, design, and timing of natural gas system improvements are in accordance with SoCalGas requirements; and (3) the improvements are adequate to serve the proposed land uses.	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (SoCalGas)	Approved natural gas improvement plans	This condition required only if a major existing gas line would potentially be affected by the subject subdivision map.	Each PA
593		EIR 589	SC 4.15-5	Prior to recordation of final tract map	Utilities (SMWD Facilities):		Utilities (SMWD Facilities):	Prior to recordation of final tract maps for the proposed land development area, the project applicant shall coordinate with SMWD and MWD to ensure that no notable disruptions to the existing domestic and non-domestic water facilities that extend through the project study area would occur as a result of project implementation.	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (SMWD, and MWD)	Verification to ensure that no notable disruptions to the existing domestic and non-domestic water facilities that extend through the project study area would occur as a result of project implementation	This condition required only if a major existing water facility or transmission line would potentially be affected by the subject subdivision map.	Each PA

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594		EIR 589	SC 4.15-6	Prior to Subarea Plans approval (Prior to Recordation, per Rose Fistrovic 8/8/13)	Utilities (SMWD Improvement Plans):		Utilities (SMWD Improvement Plans):	During development of area plans, the project applicant shall coordinate with SMWD to determine specific sizing and placement of water facilities.	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (SMWD)	Approved water improvement plans	Applicant must submit one of the following: (1) approved water improvement plan consistent with referenced Water Plan of Works, (2) letter from SMWD indicating sufficient placement and sizing of facilities for Map area, or (3) subdivision improvement agreement with County.	Each PA
595		EIR 589	SC 4.15-7	Prior to recordation of final tract maps	Utilities (SMWD Sewer Facilities):		Utilities (SMWD Sewer Facilities):	Prior to recordation of final tract maps for the proposed land development area, the project applicant shall coordinate with SMWD to ensure that no notable disruptions to the existing sewer conveyance facilities, which extend through the project study area, would occur as a result of project implementation.	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (SMWD)	Verification of coordination to ensure that no notable disruptions to the existing sewer conveyance facilities, which extend through the project study area, would occur as a result of project implementation	This condition required only if a major existing sewer line would potentially be affected by the subject subdivision map.	Each PA
596		EIR 589	SC 4.15-8	Prior to Subarea Plans approval (Prior to Recordation, per Rose Fistrovic 8/8/13)	Utilities (SMWD Wastewater):		Utilities (SMWD Wastewater):	During development of area plans, the project applicant shall coordinate with SMWD to determine specific sizing and placement of wastewater facilities.	~~County of Orange Director of Planning & Development Services~~ **Director, OC Planning** (SMWD)	Approved wastewater improvement plans	Applicant must submit one of the following: (1) approved wastewater improvement plan consistent with referenced Wastewater Plan of Works, (2) letter from SMWD indicating sufficient placement and sizing of wastewater facilities for Map area, or (3) subdivision improvement agreement with County.	Each PA

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597		EIR 589	SC 4.15-9	N/A	CUSD Fees:		CUSD Fees:	Prior to the recordation of a final tract map, the project applicant shall provide for the payment of fees pursuant to California Government Code Section 65995, unless other provision are required of the applicant through the agreement with CUSD (see Mitigation Measure 4.15-5)	OC Public Works	Monitored through compliance with MM 4.15-5	Fees must be paid in accordance with the CUSD Mitigation Agreement [Hyperlink] approved prior to issuance of the first residential building permit.	Each PA
598		EIR 589	SC 4.15-10	Prior to approval of the first Master Area Plan	Solid Waste:		Solid Waste:	Prior to approval of the first master area plan, a Solid Waste Management Plan shall be prepared and submitted to OCIWMD for review and approval. This plan, which shall include specific measures to reduce the amount of refuse generated by construction of the proposed project, shall be developed to meet waste reduction requirements established by the California Integrated Waste Management Act of 1989.	~~County of Orange Director of Planning & Development Services, and Integrated Waste Management Department,~~ **Director, OC Planning, and Director, OC Waste & Recycling**	Submittal of satisfactory Solid Waste Management Plan		Each PA
599		EIR 589	SC 4.15-11	Prior to the recordation of any final tract/parcel map except for financing programs	Library Facilities:		Library Facilities:	Prior to the recordation of any final tract/parcel map for the proposed land development area, the project proponent shall pay appropriate developer fees, as determined by the County of Orange, for needed library facilities.	~~County of Orange Director of Planning & Development Services~~, **Director, OC Planning**	Verify payment of developer fees via a payment receipt, if program is in place at the time of map recordation	Library fees to be paid on a "per dwelling unit" basis. Program being developed, in compliance with August 17, 2012 letter from RMV commiting to an agreement on a fee program prior to issuance the 600th building permit.	Each PA
602		Fire Prot. Prog.	Cond. 1	Prior to approval of any Tentative Tract Map, Tentative Parcel Map or approval of a Site Development Permit	Sprinklers:		Sprinklers:	Prior to approval of any Tentative Tract Map, Tentative Parcel Map or approval of a Site Development Permit, the applicant shall demonstrate to the Director, PDS, that all new habitable structures (residential, retail, industrial, etc.) within the Ranch Plan Planned Community shall be equipped with the Appropriate Automatic Fire Sprinkler System by Land Use Type	~~Director, PDS~~, **Director, OC Planning**	Complete per RMV Signature on Ranch Plan Fire Protection Program Agreement, as approved by Orange County Board of Supervisors March 27, 2007	Ranch Plan Fire Protection Program Agreement [Hyperlink #24]	EachVTTM, TPM and SDP

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
								(see Section F, Definitions) with the following three exceptions:				
603			Cond. 1 (cont.)	See above	Sprinklers (cont.):		Sprinklers (cont.):	a) All new or relocated agricultural and other existing and on-going structures (as regulated by Section H of the Ranch Plan PC Program Text and the Resource Organization Settlement Agreement defined Existing Agricultural/Ranching Practices) shall be reviewed by OCFA on a case-by-case basis, taking into account the historical value and operational factors, prior to a determination by the Fire Chief whether a structure is to be equipped with an automatic fire sprinkler system, or whether equivalent protection can be established.	~~Director, PDS~~, **Director, OC Planning**	No compliance necessary, listed as exception only		
604			Cond. 1 (cont.)	See above	Sprinklers (cont.):		Sprinklers (cont.):	b) All existing agricultural and on-going structures (as regulated by Section H of the Ranch Plan PC Program Text and the Resource Organization Settlement Agreement defined Existing Agricultural/Ranching Practices) are not required to be equipped with an automatic fire sprinkler system.	~~Director, PDS~~, **Director, OC Planning**	No compliance necessary, listed as exception only		
605			Cond. 1 (cont.)	See above	Sprinklers (cont.):		Sprinklers (cont.):	c) The following development-related structures are not required to be equipped with an automatic fire sprinkler system: Patio covers, storage sheds, bridges, decks, carports, Neighborhood Electrical Vehicle trellis coverings, greenhouses, wireless facilities, pump stations, or similar structures (unless specifically required by the locally adopted Fire Code).	~~Director, PDS~~, **Director, OC Planning**	No compliance necessary, listed as exception only		

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
606		Fire Prot. Prog.	Cond. 2.a.	Prior to approval of any "A" Tentative Tract Map	A Map Fire Master Plan:		A Map Fire Master Plan:	a) Prior to approval of any "A" Tentative Tract Map the applicant shall provide the ~~Manager, RDMD Subdivision and Infrastructure~~ **Manager OC Planned Communities** with a clearance from OCFA indicating that all applicable Fire Master Plan details (see RPFPP Section B, Fire Master Plan Guidelines) have been included as part of the tentative tract map or tentative parcel map to be considered by the Subdivision Committee.	~~Director, PDS~~, **Director, OC Planning**	OCFA signature on Fire Master Plan sheets of "A" TT Map		Each "A" Tentative Tract Map
607			Cond. 2.b.	Prior to approval of any "B" Tentative Tract Map, Tentative Parcel Map or approval of a Site Development Permit	A Map Fire Master Plan (cont.):		A Map Fire Master Plan (cont.):	b) Prior to approval of any "B" Tentative Tract Map, Tentative Parcel Map or approval of a Site Development Permit, the applicant shall provide the ~~Manager, RDMD Subdivision and Infrastructure~~ **Manager OC Planned Communities** with a clearance from OCFA indicating that all applicable Fire Master Plan details (see RPFPP Section B, Fire Master Plan Guidelines) have been included as part of the tentative tract map or tentative parcel map to be considered by the Subdivision Committee, or included as part of the Site Development Permit to be considered by the appropriate decision maker. All Fire Master Plans addressing "B" Tentative Tract Maps, Tentative Parcel Maps and Site Development Permits shall also include applicable approved Fuel Modification Plan details, and construction details allowed within Radiant Heat/Ember Mitigation & Basic Zones per Section B.7, Attachment 15 and Section G-__.	~~Director, PDS~~, **Director, OC Planning**	OCFA signature on Fire Master Plan sheets of "B" TT Map or SDP		Each "B" TT Map and Site Development Permit

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
608			Cond. 2.c.	Prior to issuance of building permits for large lot and/or custom lot "B" Tentative Tract Map (if applicable)	A Map Fire Master Plan (cont.):		A Map Fire Master Plan (cont.):	c) Prior to issuance of building permits for large lot and/or custom lot "B" tentative tract maps, an updated/ subsequent Single Family Fire Master Plan may be required to address only the following requirements of RPFPP Section B, Fire Master Plan Guidelines: • B.1.d) Access Gates Exhibit 4b and 4c • B.1.g Gradient of accessway • B.3 Gates, and attachment 9 (if applicable) • B.4 Hydrants	~~Director, PDS~~, **Director, OC Planning**	OCFA clearance of the Single Family Fire Master Plan for each applicable lot		Each applicable "B" TT Map
609			Cond. 2.d.	Prior to initiation of combustible construction	A Map Fire Master Plan (cont.):		A Map Fire Master Plan (cont.):	d) Prior to initiation of combustible construction the following fire master plan improvements shall be verified by site inspection: • Emergency access • Water Supply	~~Director, PDS~~, **Director, OC Planning**	Site inspection		
610			Cond. 2.e.	Prior to approval of any new or relocated agricultural and other existing and on-going structures	A Map Fire Master Plan (cont.):		A Map Fire Master Plan (cont.):	e) All new or relocated agricultural and other existing and on-going structures (as regulated by Section H of the Ranch Plan PC Program Text and the Resource Organization Settlement Agreement defined Existing Agricultural/Ranching Practices) shall be reviewed by OCFA on a case-by-case basis, taking into account the historical value and operational factors, prior to a determination by the Fire Chief whether aspects of RPFPP Section B, Fire Master Plan Guidelines, shall be applied or whether equivalent protection can be established.	~~Director, PDS~~, **Director, OC Planning**	No compliance necessary		
611			Cond. 2.f.	Not applicable	A Map Fire Master Plan (cont.):		A Map Fire Master Plan (cont.):	f) All existing agricultural and on-going structures (as regulated by Section H of the Ranch Plan PC Program Text and the Resource Organization Settlement Agreement defined Existing Agricultural/Ranching Practices) do not require a Fire Master Plan.	~~Director, PDS~~, **Director, OC Planning**	No compliance necessary		

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
612			Cond. 2.g.	First subdivision within each portion of the Ranch Plan Planned Community Development Planning Area	A Map Fire Master Plan (cont.):		A Map Fire Master Plan (cont.):	g) Subsequent subdivision of the approved Fire Master Plan areas shall be reviewed by OCFA staff, and shall not require Subdivision Committee or Site Development Permit decision-maker approval.	~~Director, PDS~~, **Director, OC Planning**	Each tentative tract and parcel map include a Fire Master Plan		Each Applicable TT Map
613			Cond. 3.a.	Approval of Ranch Plan Fire Protection Program	Preliminary Fuel Mod:		Preliminary Fuel Mod:	a) A Ranch Plan Planned Community-wide Preliminary Fuel Modification Plan (RPFPP Attachments 17 through 27) has been approved for the peripheral edge of all Ranch Plan development Planning Areas.	~~Director, PDS~~, **Director, OC Planning**	Complete upon approval of Ranch Plan Fire Protection Program	Ranch Plan Fire Protection Program Agreement [Hyperlink #24]	
614		Fire Prot. Prog.	Cond. 3.b.	Prior to approval of Master Area Plan	Master Area Plan Preliminary Fuel Mod:		Master Area Plan Preliminary Fuel Mod:	b) Prior to approval of each Master Area Plan the applicant shall provide the Director, PDS, with a clearance from OCFA indicating their review and approval of a Preliminary Fuel Modification Plan that either confirms or modifies the assumed 110-foot wide fuel modification zones in the approved Community-wide Preliminary Fuel Modification Plan (per RPFPP Section C.1). If adaptive management tools for controlling the growth of vegetation surrounding Ranch Plan development are not successful and vegetation transitions from Fuel Model 2 (FM2) to Fuel Model 4 (FM4), as classified by the BEHAVE Fire Behavior Fuel Modeling System, OCFA may opt to require Fuel Modification zone widths based on the BEHAVE model anticipated flame lengths plus 20-feet for defensible space.	~~Director, PDS~~, **Director, OC Planning**	Provide the Director, PDS, with a clearance from OCFA indicating their review and approval of a Preliminary Fuel Modification Plan		

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
615		Fire Prot. Prog.	Cond. 3.c.	Prior to approval of any Tentative Tract Map	Conceptual Fuel Mod:		Conceptual Fuel Mod:	c) Prior to the issuance of a Tentative Tract Map approval, the applicant shall provide the ~~Manager, PDS Subdivision and Infrastructure~~ **Manager OC Planned Communities** with a clearance from OCFA demonstrating approval of a Conceptual Fuel Modification Plan per RPFPP Section C.2, and Attachments 17 through 30), shall also include applicable approved construction details allowed within Radiant Heat & Basic Zones per Section B.7, C.2.e., Attachment 15 and Section G-__.	~~Director, PDS~~, **Director, OC Planning**	Provide the ~~Manager, PDS Subdivision and Infrastructure~~ **Manager OC Planned Communities** with a clearance from OCFA demonstrating approval of a Conceptual Fuel Modification Plan		
616		Fire Prot. Prog.	Cond. 3.d.	Prior to the issuance of a GB precise grading permit	Precise Fuel Mod:		Precise Fuel Mod:	d) Prior to the issuance of a GB precise grading permit, the applicant shall provide the ~~Manager, PDS Subdivision and Infrastructure~~ **Manager OC Planned Communities,** with a clearance from OCFA indicating their review and approval of a Precise Fuel Modification Plan per RPFPP Section C.3.	~~Director, PDS~~, **Director, OC Planning**	Provide the ~~Manager, PDS Subdivision and Infrastructure~~ **Manager OC Planned Communities** with a clearance from OCFA demonstrating approval of a Conceptual Fuel Modification Plan		
617		Fire Prot. Prog.	Cond. 3.e.	Prior to the issuance of a building permit for construction phases of Vesting Tentative Tract Maps adjoining fuel modification areas, and prior to the County of Orange allowing fuel tanks, generators and/or Lumber Drops	Vegetation Clearance:		Vegetation Clearance:	e) Prior to the issuance of a building permit for construction phases of Vesting Tentative Tract Maps adjoining fuel modification areas, and prior to the County of Orange allowing fuel tanks, generators and/or Lumber Drops (see Section E, Definitions) within the project site, the applicant shall provide the Manager, Building & Safety, with a clearance from OCFA indicating that vegetation has been cleared and maintained at a height of 8 inches or less, or that the appropriate fuel modification thinning and removal of plants from the OCFA Undesirable Plant List has been implemented.	~~Director, PDS~~, **Director, OC Planning**	Provide the Manager, Building & Safety, with a clearance from OCFA indicating that vegetation has been cleared and maintained		

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
618		Fire Prot. Prog.	Cond. 3.f.	Prior to the issuance of any certificate of use and occupancy adjoining fuel modification areas	Occupancy Requirements:		Occupancy Requirements	f) Prior to issuance of any certificate of use and occupancy, the applicant shall provide the Manager, Building & Safety, with a clearance from OCFA indicating that: 1. Approved "A" Zone planting has been installed and approved irrigation has been activated. 2. Approved fuel modification zone markers have been installed. 3. Accessways every 500 feet (or as approved) have been installed. 4. Approved thinning of the "B" and "C" Zones and removal of plants from the OCFA Undesirable Plant List have been completed. 5. CC&Rs or other approved documents contain provisions for maintaining the fuel modification zones.	~~Director, PDS~~, **Director, OC Planning**	Provide the Manager, Building & Safety, with a clearance from OCFA indicating installation and thinning		
619		Fire Prot. Prog.	Cond. 4	Prior to recordation of each Tract Map	Administrative Approval of Tract Maps		Administrative Approval of Tract Maps	Prior to recordation of each Tract Map, the applicant shall submit a copy of the proposed Tract map to OCFA for administrative approval (verifying that the map remains consistent with previous approvals), and for OCFA's record keeping purposes.	~~Director, PDS~~, **Director, OC Planning**	Submit a copy of the proposed Tract map to OCFA for administrative approval		
620		Fire Prot. Prog.	Cond. 5	Prior to recordation of each applicable Tract Map	Financial Security for Opticon Devices		Financial Security for Opticon Devices	Prior to recordation of each applicable Tract Map, the applicant shall provide the ~~Manager, PDS Subdivision and Infrastructure~~ **Manager OC Planned Communities** with a clearance from OCFA demonstrating financial security (i.e., bonding, letter of credit, etc.) has been secured to address Opticom device at the signalized intersection of _____ and _____.	~~Director, PDS~~, **Director, OC Planning**	Provide the ~~Manager, PDS Subdivision and Infrastructure~~ **Manager OC Planned Communities** with a clearance from OCFA demonstrating financial security has been secured		

Item No.	Cross Reference Column	Source	Condition, Mitigation, Public Benefit or Entitlement Provision	Timing	Subject	Keywords	Title	Requirements or Entitlement Provisions	Reviewing / Approving Authority (Advisory Agency in Parentheses)	Form of Compliance	Guidance for Compliance	Area Application
621		Fire Prot. Prog.	Cond. 6	Prior to approval of any GA "Mass Grading Permit", operations that include generators and fuel tanks (up to 10,000 gallons)	Generators and Fuel Tanks		Generators and Fuel Tanks	Prior to approval of any GA "Mass Grading Permit", operations that include generators and fuel tanks (up to 10,000 gallons), shall be included as part of the grading plan notes. The applicant commits to the following (a-d) prior to [illegible] fuel tanks and/or deliver systems within the grading permit area:	~~Director, PDS~~, **Director, OC Planning**	Notes on grading plan		
622		Fire Prot. Prog.	Cond. 6 (cont.)	See above	Generators and Fuel Tanks (cont.)		Generators and Fuel Tanks (cont.)	a) All Weather Surface access, a minimum of 16-feet wide, to within 300 feet of any fuel tank and/or generator.	~~Director, PDS~~, **Director, OC Planning**	Notes on grading plan		
623		Fire Prot. Prog.	Cond. 6 (cont.)	See above	Generators and Fuel Tanks (cont.)		Generators and Fuel Tanks (cont.)	b) No combustible vegetation or combustible structures within 500 feet of any fuel tank and/or generator.	~~Director, PDS~~, **Director, OC Planning**	Notes on grading plan		
624		Fire Prot. Prog.	Cond. 6 (cont.)	See above	Generators and Fuel Tanks (cont.)		Generators and Fuel Tanks (cont.)	c) Only Class II or III combustible liquids are stored or dispensed.	~~Director, PDS~~, **Director, OC Planning**	Notes on grading plan		
625		Fire Prot. Prog.	Cond. 6 (cont.)	See above	Generators and Fuel Tanks (cont.)		Generators and Fuel Tanks (cont.)	d) Prior to actual installation of tanks, RMV agrees to process the required OCFA plan approvals.	~~Director, PDS~~, **Director, OC Planning**	Notes on grading plan		
626		Fire Prot. Prog.	Cond. 7	Upon issuance of 95% of the residential and non-residential certificates of occupancy within each development Planning Area (PA1-PA5, and PA8)	Remapping from SRA to LRA		Remapping from SRA to LRA	Upon issuance of 95% of the residential and non-residential certificates of occupancy within each development Planning Area (PA1-PA5, and PA8), OCFA shall recommend -- and use best commercial efforts to accomplish -- that as part of the State of California Department of Forestry and Fire Protection regular mapping updates, the entire Planning Area be redesignated from State Responsibility Area (SRA) to Local Responsibility Area (LRA) Urbanized/Developed Areas, and that the surrounding approved Fuel Modification Zone be redesignated as Moderate Fire Hazard Zone.	OCFA	At 95% occupancy, OCFA to recommend remapping		

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627		Afford. Hous. Agmt.	Cond. 5 (Pg. 11)	Within six months after the Board approves Affordable Housing Implementation Agreement	Infrastructure Financing:		Infrastructure Financing:	The parties and OWNERS should be able to provide Housing Sites located within the Subarea Plans and Approved Builders will be able to construct Affordable Housing Projects on the Housing Sites, within six months after the Board approves this Implementation Agreement, the COUNTY and OWNERS will submit to the Board a proposed agreement regarding implementation of infrastructure. COUNTY and OWNERS agree to consider financing mechanisms, including but not limited to (i) an IFD, (ii) a similar financing mechanism that will meet the goals established in Sections 6, 7 and 8 of the Site Set-aside Agreement, and (iii) County ownership/operation/ maintenance of infrastructure. COUNTY and OWNERS wish to have the financing mechanism in place no later than the date the first Approved Builder obtains site control pursuant to Section 4(g) for the first Housing Site.	Director, ~~RDMD~~, **Director, OC Public Works**	Submit to the Board a proposed agreement regarding implementation of infrastructure.		Each PA

County of Orange - OC Public Works
OC Development Services
CONDITIONALLY APPROVED
Approved By: Planning Commission
Approval Date: 2/25/2015
Permits: PA140072 (PA3 & PA4 Addendum)

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX B

BIOLOGICAL SPECIAL STATUS SPECIES

TABLES B-1 AND B-2

Table B-1
Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
			Invertebrates		
Branchinecta lynchi	Vernal pool fairy shrimp	FT/None	Vernal pools	Species does not occur within the study area.	No potential to occur due to lack of suitable vernal pool habitat.
Branchinecta sandiogonensis	San Diego fairy shrimp	FE/None	Vernal pools	Occurs in two general locations in the study area, including in two pools on Chiquita Ridge and in three pools located along Radio Tower Road south of Ortega Highway.	No potential to occur due to lack of suitable vernal pool habitat.
Euphydryas editha quino	Quino checkerspot butterfly	FE/None	Sparsely vegetated hilltops, ridgelines, occasionally rocky outcrops; host plant *Plantago erecta* and nectar plants must be present.	Species does not occur within subregion or expected within the study area.	No potential to occur.
Euphyes vestris harbisoni	Harbison's dun skipper	None/SAL	Restricted to springs and seeps within riparian, oak woodlands, and chaparral habitats supporting host plant *Carex spissa.*	Although no data points exist for this species, it potentially occurs within the study area due to the presence of *Carex spissa.*	Low potential to occur due to a general lack of suitable habitat. Host plant has not been detected in Project Area.
Streptocephalus woottoni	Riverside fairy shrimp	FE/None	Vernal pools	Occurs in two general locations in the study area, including on one large pool on Chiquita Ridge and in three pools located along Radio Tower Road south of Ortega Highway. Also known from Saddleback Meadows and near the intersection of Antonio Parkway and FTC-North.	No potential to occur due to lack of suitable vernal pool habitat.
			Fish		
Eucyclogobius newberryi	Tidewater goby	FE/SSC	Low-salinity waters in coastal wetlands.	Not expected, no suitable habitat present within the study area.	No potential to occur due to lack of suitable habitat and outside range.

Table B-1
Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Gasterosteus aculeatus microcephalus	Partially armored threespine stickleback	None/SAL	Weedy permanent pools or backwaters, and in slow moving water along the margins of the stream.	Known to occur within San Juan Creek.	Known to occur in San Juan Creek adjacent to PA 3.
Gila orcuttii	Arroyo chub	None/SSC	Warm, fluctuating streams with slow moving or backwater sections of warm to cool streams; substrates of sand or mud.	Known to occur within San Juan Creek and lower Cañada Gobernadora.	Known to occur in San Juan Creek between PA 3 and PA 4
Oncorhynchus mykiss irideus	Southern steelhead DPS	FE/SSC	Adult phase primarily in ocean, occur in drainages of coastal watersheds, from lagoons and estuaries to lower reaches of headwater systems with perennial flow. Spawn in meandering channels containing pools, riffles and runs with gravel and small cobble.	No current records for San Juan Creek, believed to be extirpated from this drainage.	No current records for San Juan Creek between PA 3 and PA 4; believed to be extirpated from this drainage
			Amphibians		
Anaxyrus californicus	Arroyo toad	FE/SSC	Open, braided stream channels for breeding and adjacent stream terraces and uplands for foraging and wintering.	San Juan Creek, lower Gabino Creek, lower Cristianitos Creek, and Talega Creek.	Known from San Juan Creek between PA 3 and PA 4.
Rana draytoni	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands.	Does not occur within the study area.	Does not occur in Project Area.

Table B-1
Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Spea hammondii	Western spadefoot	None/SSC	Most common in grasslands, coastal sage scrub near rain pools or vernal pools; sometimes riparian habitats.	Vernal pools on Radio Tower Road, San Juan Creek from the Rancho Mission Viejo Headquarters to the confluence with Verdugo Canyon, a stock pond in upper Cristianitos Canyon, and Lower Gabino Canyon.	Low potential to occur. No known records from Project Area and lack of suitable breeding sites.
Taricha torosa	Coast Range newt	None/SSC (Monterey Co. south only)	Grassland, woodland, forest, but require ponds, reservoirs or slow-moving streams for reproduction.	Although not observed, potential to occur within suitable habitat in the study area.	Low potential to occur due to lack of suitable aquatic breeding habitat.
			Reptiles		
Anniella pulchra pulchra	Silvery legless lizard	None/SSC	Loose soils (sand, loam, humus) in coastal dune, coastal sage scrub, woodlands, and riparian habitats	Expected within San Juan Creek and other areas within the study area containing suitable habitat.	Expected to occur in San Juan Creek area between PA 3 and PA 4 and moderate potential to occur elsewhere in Project Area where suitable habitat is available.
Arizona elegans occidentalis	Coastal (California) glossy snake	None/None	Grassland, chaparral, coastal sage scrub, woodlands in sandy and rocky substrates.	Observed in upland habitats adjacent to San Juan Creek. Expected elsewhere throughout the study area.	Expected to occur in San Juan Creek between PA 3 and PA 4 and moderate potential to occur in coastal sage scrub, chaparral, grassland, and forest and woodland.
Charina trivirgata	Rosy boa	None/SAL	Rocky chaparral, coastal sage scrub, oak woodlands, desert and semi-desert scrub.	Although not observed within the study area, species is known from nearby Casper's Wilderness Park. Expected within the study area in rocky areas.	Moderate potential to occur in coastal sage scrub, chaparral, and forest and woodland.
Emys marmorata	Western pond turtle	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, reservoirs with emergent basking sites; adjacent uplands used during winter.	Known to occur in San Juan Creek, the upper portion of Cristianitos Creek in a small stockpond, at Jerome's Lake in the upper portion of Gabino Canyon, and at a stock pond within the nursery north of Ortega Highway.	Expected to occur in San Juan Creek between PA 3 and PA 4 and may use uplands in PA 3 and PA 4 for aestivation. Two documented occurrences in PA 3.

Table B-1
Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Aspidoscelis tigris stejnegeri	Coastal whiptail	None/SAL	Coastal sage scrub, chaparral, and woodland.	Known to occur throughout the study area within suitable habitat.	Known to occur in Project Area, including 4 documented occurrence locations.
Aspidoscelis hyperythra	Orangethroat whiptail	None/SSC	Coastal sage scrub, chaparral, grassland, juniper and oak woodland.	Known to occur throughout the study area within suitable habitat.	Known to occur in Project Area, including 38 documented occurrence locations.
Coleonyx variegatus abbotti	San Diego banded gecko	None/SAL	Cismontane chaparral, coastal sage scrub, desert scrub; granite outcrops.	Although not observed within the study area, this secretive species may still occur within the study area in suitable habitat.	Moderate potential to occur in coastal sage scrub, chaparral, and forest and woodland.
Crotalus ruber	Red-diamond rattlesnake	None/SSC	Variety of shrub habitats where there is heavy brush, large rocks, or boulders.	Known to occur throughout the study area within suitable habitat.	High potential to occur in coastal sage scrub, chaparral, and grassland throughout Project Area.
Diadophis punctatus similis	San Diego ringneck snake	None/SAL	Moist habitats; woodland, forest, grassland, scrub, chaparral; typically found under debris.	Known to occur throughout the study area within suitable habitat.	High potential to occur in coastal sage scrub, chaparral, and forest and woodland throughout Project Area.
Plestiodon skiltonianus interparietalis.	Coronado Island skink	None/SSC	Grassland, riparian and oak woodland; found in litter, rotting logs, under flat stones.	Known to occur throughout the study area within suitable habitat although distinction from western skink is not clear.	Moderate potential to occur in riparian and woodland and forest. Western skink documented in one location in PA 3, but subspecies undetermined.
Lampropeltis Zonata (pulchra) (San Diego population)	San Diego mountain kingsnake	None/SSC	Coniferous forest, oak-pine and riparian woodlands, chaparral, and scrub.	Although not observed, this species may still occur within the study area in suitable habitat.	Low potential to occur due to relatively low elevation of Project Area.
Phrynosoma blainvillii	Coast horned lizard	None/SSC	Coastal sage scrub, annual grassland, chaparral, oak and riparian woodland, coniferous forest.	Known to occur throughout the study area within suitable habitat.	Known to occur in Project Area, including 1 documented occurrence location in PA 3.
Salvadora hexalepis virgultea	Coast patch-nosed snake	None/SSC	Chaparral, coastal scrub, grassland, woodland, washes, sandy flats, rocky areas.	Although only observed at one location with the study area in upper Cristianitos Canyon, this species is expected to occur throughout the study area within suitable habitat.	Moderate potential to occur in coastal sage scrub, chaparral, grassland, and woodland and forest.

Table B-1
Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Thamnophis sirtalis sp.	South coast garter snake	None/SSC	Marsh and upland habitats near permanent water that have strips of riparian vegetation.	Although not observed, this species may still occur within the study area in suitable habitat.	Low potential to occur due to general lack of suitable habitat and species' rarity.
Thamnophis hammondii	Two-striped garter snake	None/SSC	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools.	Know to occur at Chiquita Canyon, San Juan Creek, Talega Cayon, and upper Gabino Canyon. May occur elsewhere the study area within suitable habitat.	Expected to occur in San Juan Creek between PA 3 and PA 4 and moderate potential to occur in suitable habitat elsewhere in Project Area.
			Birds		
Accipiter cooperii	Cooper's hawk	None/WL (nesting)	Riparian and oak woodlands, mountain canyons.	Known to occur in the study area for foraging and nesting.	Known to occur in woodland in Project Area, including 1 historical nest site in PA 4. Like nests in riparian and woodland elsewhere in Project Area.
Accipiter striatus	Sharp-shinned hawk	None/WL (nesting)	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats.	This species occurs in Orange County only as a migrant and winter visitor and does not breed here. This species is known to occur and is expected throughout the study area.	Moderate potential to occur as migrant and winter visitor.
Agelaius tricolor	Tricolored blackbird	BCC/SSC (nesting colony)	Nests near fresh water, emergent wetland with cattails or tules; forages in grasslands, woodland, agriculture.	This species has been observed in Chiquita Canyon north and south of the "Narrows," lower Cañada Gobernadora, grassland south of Ortega Highway, CalMat in San Juan Creek, Trampas Canyon, Riverside Cement north of Gabino Canyon, and mouth of Verdugo Canyon. This species may forage throughout the study area within suitable habitat.	Moderate potential to forage in Project Area. May nest along San Juan Creek between PA 3 and PA 4 when suitable nesting conditions are present.

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Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	None/WL	Grass-covered hillsides, coastal sage scrub, chaparral with boulders and outcrops.	Known to occur throughout the study area within suitable habitat.	Known to occur in Project Area, including 52 documented occurrence locations.
Ammodramus savannarum	Grasshopper sparrow	None/SSC (nesting)	Open grassland and prairie, especially native grassland with a mix of grasses and forbs.	Known to occur throughout the study area within suitable habitat.	Known to occur in Project Area, including 54 documented occurrence locations.
Ardea alba	Great egret	None/SAL (nesting colony)	Nests colonially in large trees. Rookery sites are typically located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Known to occur in study area within suitable habitat, but nesting colonies have not been observed.	High potential to forage in Project Area, but no nesting colonies are present.
Ardea herodias	Great blue heron	None/SAL (nesting colony	Variety of habitats, but primarily wetlands; lakes, rivers, marshes, mudflats, estuaries, saltmarsh, riparian habitats.	Known to occur in study area within suitable habitat, but nesting colonies have not been observed.	High potential to forage in Project Area, but no nesting colonies are present.
Artemisiospiza belli belli	Bell's sage sparrow	BCC/WL	Coastal sage scrub and dry chaparral along coastal lowlands and inland valleys.	Although not observed within the study area, this species may still occur within the study area in suitable habitat.	Moderate potential to occur in coastal sage scrub and chaparral in Project Area.
Aquila chrysaetos	Golden eagle	BCC/WL (nesting & wintering), FP	Open country, especially hilly and mountainous regions; grassland, coastal sage scrub, chaparral, oak savannas, open coniferous forest.	Suitable foraging habitat for this species occurs within the study area. Unlikely to nest within the study area.	Moderate potential to forage in Project Area, but no suitable nesting habitat is present.
Asio flammeus	Short-eared owl	None/SSC (nesting)	Grassland, prairies, dunes, meadows, irrigated lands, saline and freshwater emergent wetlands.	Although not observed, this species may still occur within the study area in suitable habitat. Not expected to nest in study area.	Moderate potential to occur in grassland and agriculture in Project Area, but not expected to nest.
Asio otus	Long-eared owl	None/SSC (nesting)	Riparian, live oak thickets, other dense stands of trees, edges of coniferous forest.	This species nests and forages within suitable habitat in the study area.	High potential to forage in Project Area in grassland and agriculture. Moderate potential to nest in woodland and forest.

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Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Athene cunicularia	Burrowing owl	BCC/SSC (burrow sites & some wintering sites)	Grassland, lowland scrub, agriculture, coastal dunes and other artificial open areas.	Species not believed to nest within the study area but may occur during the winter.	Moderate potential to occur in winter in grassland and agriculture in Project Area.
Baeolophus inornatus	oak titmouse	BCC/SAL (nesting)	Oak woodlands and forests	Expected to occur in oak forest and woodland communities throughout study area.	High potential to occur in woodland and forest in Project Area.
Botarus lentiginosus	American bittern	None/SAL	Emergent habitat of freshwater marsh and vegetation borders of ponds and lakes.	Observed within Cañada Chiquita. Freshwater marsh area of Cañada Gobernadora currently provides potential nesting habitat for this species.	Low potential to occur in Project Area due to small amount of suitable habitat. Could nest in San Juan Creek between PA 3 and PA 4 when suitable nesting habitat is available.
Buteo swainsoni	Swainson's hawk	BCC/ST (nesting)	Open grassland, shrublands, croplands.	Species known to occur within the area as a rare migrant. May periodically forage onsite during migration. No longer nests in Orange County.	Potential to occasionally occur and forage in Project Area as migrant.
Buteo regalis	Ferruginous hawk	BCC/WL (wintering)	Open, dry country, grasslands, open fields, agriculture.	Species known to occur within the study area during winter as a visitor for foraging. Does not nest in the region.	Moderate potential to forage in grasslands and agriculture in Project Area during winter.
Calypte costae	Costa's hummingbird	None/SAL (nesting)	Occurs in desert wash, edges of desert riparian and valley foothill riparian, coastal scrub, desert scrub, desert succulent shrub, lower-elevation chaparral, and palm oasis.	Known to nest throughout the study area within suitable habitat.	High potential to nest in coastal sage scrub and chaparral in Project Area.
Campylorhynchus brunneicapillus sandiegensis	Coastal cactus wren	BCC/SSC (San Diego & Orange Counties only)	Southern cactus scrub, maritime succulent scrub, cactus thickets in coastal sage scrub.	Known to occur throughout the study area within suitable habitat.	Known to occur in Project Area, including 63 documented occurrence locations.

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Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Charadrius montanus	Mountain plover	BCC/SSC (wintering)	Nests in open, shortgrass prairies or grasslands; winters in shortgrass plains, plowed fields, open sagebrush, and sandy deserts.	Moderate potential to occasionally occur in agriculture in study area during winter.	Moderate potential to occasionally occur in agriculture in Project Area during winter.
Chondestes grammacus	Lark sparrow	None/SAL (nesting)	Grassland-shrub-woodland margins	Known to occur throughout the study area in suitable habitat.	High potential to occur in grassland/coastal sage scrub/chaparral/woodland ecotones in Project Area.
Circus cyaneus	Northern harrier	None/SSC (nesting)	Open wetlands (nesting), pasture, old fields, dry uplands, grasslands, rangelands, coastal sage scrub.	Known to occur within the study area and potentially nests within the study area.	High potential to forage in coastal sage scrub, grasslands, and agriculture in Project Area. Some potential to nest along San Juan Creek between PA 3 and PA 4 when suitable nesting habitat is available.
Coccyzus americanus occidentalis	Western yellow-billed cuckoo	PT (western DPS), BCC/SE	Dense, wide riparian woodlands and forest with well- developed understories.	Species has not been observed within study area, not expected.	No potential to occur in Project Area due to lack of suitable habitat.
Egretta thula	Snowy egret	None/SAL (nesting colony)		Known to occur in study area within suitable habitat, but nesting colonies have not been observed.	High potential to forage in Project Area, but no nesting colonies are present.
Elanus leucurus	White-tailed kite	None/FP (nesting)	Open grasslands, savanna-like habitats, agriculture, wetlands, oak woodlands, and riparian.	Known to occur within San Juan Creek, Cañada Gobernadora, Gabino Canyon, and Richard and Donna O'Neill Conservancy.	High potential to forage in grassland, agriculture, and coastal sage scrub in Project Area. Known to nest in PA 3; one historical nest site and may nest in riparian and woodlands. Also known to nest in Cañada Gobernadora that will be crossed by K Street and Cow Camp Road.
Empidonax traillii extimus	Southwestern willow flycatcher	FE/SE (nesting)	Riparian woodlands along streams and rivers with mature, dense stands of willows or alders; may nest in thickets dominated by tamarisk.	Known to nest in Cañada Gobernadora.	No potential to nest in PA 3 and PA 4. Known to nest in Cañada Gobernadora that will be crossed by K Street and Cow Camp Road.

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Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Eremophila alpestris actia	California horned lark	None/WL	Open habitats, grassland, rangeland, shortgrass prairie, montane meadows, coastal plains, fallow grain fields.	Known to occur throughout the study area in suitable habitat.	High potential to forage in grassland and agriculture in Project Area
Falco columbarius	Merlin	None/WL (wintering)	Nests in open country; open coniferous forest, prairie; winters in open woodlands, grasslands, cultivated fields, marshes, estuaries and sea coasts.	This species occurs in Orange County only as a rare migrant and winter visitor. This species has been observed in the study area.	Moderate potential to forage in grassland and agriculture in Project Area during winter.
Falco mexicanus	Prairie falcon	BCC/WL (nesting)	Grassland, savannas, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs.	Species known to occur within the area as an occasional winter visitor to forage. No longer nests in Orange County.	High potential to forage in grassland and agriculture in Project Area during winter. Suitable nesting habitat is not present.
Falco peregrinus anatum	American peregrine falcon	FD, BCC/SD, FP (nesting)	Nests on cliffs, buildings, bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present.	Species known to occur within the area as an occasional winter visitor to forage. Not expected to nest within the study area.	Moderate potential to forage in grassland and agriculture in Project Area during winter. Suitable nesting habitat is not present.
Haliaeetus leucocephalus	Bald eagle	FD, BCC/SE, FP (nesting & wintering)	Seacoasts, rivers, swamps, large lakes; winters at large bodies of water in lowlands and mountains.	Not expected.	No potential to occur due to lack of suitable habitat.
Icteria virens	Yellow-breasted chat	None/SSC (nesting)	Dense, relatively wide riparian woodlands and thickets of willows, vine tangles and dense brush.	Known to occur within Cañada Chiquita, Cañada Gobernadora, San Juan Creek, Cristianitos Creek, Blind Canyon, and Gabino Canyon	Known to nest in Project Area; 4 documented occurrences in PA 3.
Ixobrychus exilis	Least bittern	BCC/SSC (nesting)	Dense emergent wetland vegetation, sometimes interspersed with woody vegetation and open water.	Has occurred within the study area, Cañada Gobernadora may provide suitable habitat for this species.	Potential to nest in Cañada Gobernadora that will be crossed by K Street and Cow Camp Road. May also nest in San Juan Creek when suitable nesting habitat is available.

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Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Lanius ludovicianus	Loggerhead shrike	BCC/SSC (nesting)	Open ground including grassland, coastal sage scrub, broken chaparral, agriculture, riparian, and open woodland.	Known to occur infrequently within the study area. Resident, migrant, and wintering populations expected.	High potential to forage in grassland, agriculture, coastal sage scrub and chaparral in Project Area.
Larus californicus	California gull	None/WL (nesting colony)	Agriculture, water, beach, and marsh.	Known to occur within the study area.	High potential to occur in Project Area but no nesting colonies are present.
Nycticorax nycticorax	Black-crowned night heron (nesting colony)	None/SAL (nesting colony)	Marshes, ponds, reservoirs, estuaries; nests in dense-foliaged trees and dense fresh or brackish emergent wetlands.	High potential to occur in study area but no known nesting colonies.	Some potential to nest in Cañada Gobernadora that will be crossed by K Street and Cow Camp Road. May also nest in San Juan Creek when suitable nesting habitat is available.
Pandion haliaetus	Osprey	None/WL (nesting)	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast.	Known to occur along San Juan Creek and in the vicinity of the open water areas of the silica mining operations south of Ortega Highway.	May occasionally forage in San Juan Creek between PA 3 and PA 4, but unlikely to nest in Project Area due to lack of large water bodies with prey to support reproduction.
Pelecanus erythrorhynchos	American white pelican	None/SSC (nesting colony & communal roosts)	Open water.	Potential to occur within the study area in large water bodies.	No potential to occur in Project Area due to lack of suitable habitat.
Phalacrocorax auritus	Double-crested cormorant	None/WL (nesting colony)	Lakes, rivers, reservoirs, estuaries, ocean; nests in tall trees, rock ledges on cliffs, rugged slopes.	Known to occur within the study area. Open water areas along San Juan Creek and at the silica mine south of Ortega Highway provide suitable habitat.	May forage in San Juan Creek between PA 3 and PA 4, but unlikely to nest in Project Area due to lack of suitable nesting habitat.
Picoides nuttallii	Nuttall's woodpecker	BCC/SAL (nesting)	Lower elevation riparian deciduous and oak habitats.	Expected to occur in oak forest and woodland and riparian communities throughout study area.	High potential top occur in riparian and woodland and forest in Project Area.
Piranga rubra	Summer tanager	None/SSC (nesting)	Nests in riparian woodland; winter habitats include parks and residential areas.	May occur within the study area but only as a rare migrant.	Some potential to occur riparian and woodland and forest in Project Area, but only as a rare migrant.

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Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Plegadis chihi	White-faced ibis	None/WL (nesting colony)	Nests in marsh; winter foraging in shallow lacustrine waters, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields and estuaries.	Expected to occur within the study area in suitable habitat but only as a rare visitor.	Low potential to occur in Project Area due to lack of suitable habitat.
Pooecetes gramineus affinis	Oregon vesper sparrow	BCC/SSC (wintering)	Grasslands, open brushlands, meadows, stubblefields, and road edges in valleys and desert regions	Expected to occur within the study area in suitable habitat but as winter visitor	Moderate potential to occur occasionally in grasslands, agriculture, and coastal sage scrub in Project Area as a winter visitor.
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC	Coastal sage scrub, coastal sage scrub-chaparral mix, coastal sage scrub-grassland ecotone, riparian in late summer.	Known to occur throughout the study area.	Known to occur in Project Area; 19 documented occurrence locations.
Progne subis	Purple martin (nesting)	None/SSC	Nests in tall sycamores, pines, oak woodlands, coniferous forest; forages over riparian, forest and woodland.	May occur within the study area but only as a rare migrant.	Some potential to occur riparian and woodland and forest in Project Area, but only as a rare migrant.
Rynchops niger	Black skimmer	BCC/SSC (nesting colony)	Open water of ocean and coastal zone.	Not expected.	No potential to occur in Project Area due to lack of suitable habitat.
Selasphorus sasin	Allen's hummingbird	BCC/SAL (nesting)	In the region, breeds primarily in riparian and urban habitats. Migrants occur in a variety of woodland and scrub habitats.	Known to nest within the study area within suitable habitat.	Moderate potential to nest in Project Area due to general lack of suitable habitat; may use coastal sage scrub, chaparral and woodland and forest as non-nesting habitat.
Setophaga petechial	Yellow warbler	BCC/SSC (nesting)	Nests in lowland and foothill riparian woodlands dominated by cottonwoods, alders and willows; winters in a variety of habitats.	Known to occur within Cristianitos Creek, San Juan Creek, , and Cañada Chiquita.	Known to occur and likely nest in Project Area, including in San Juan Creek between PA 3 and PA 4 and Cañada Gobernadora that will be crossed by K Street and Cow Camp Road. One occurrence location at bridge crossing.

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Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Spinus lawrencei	Lawrence's goldfinch	BCC/SAL (nesting)	Riparian and woodland habitats in association with grasslands.	Known from one location but likely to occur throughout the study area within suitable habitat.	High potential to nest in riparian and woodland and forest in Project Area.
Spizella passerine	chipping sparrow	None/SAL (nesting)	Open woodlands with sparse or low shrubs.	Expected to occur in open woodland in study area.	High potential to nest in woodland and forest in Project Area
Sphyrapicus ruber	Red-breasted sapsucker	None/SAL (nesting)	Riparian and woodland habitats.	Expected occur within the study area, but only as a winter visitor.	Moderate potential to occur riparian and woodland and forest in Project Area, but only as winter visitor.
Thalasseus elegans	Elegant tern	None/WL (nesting colony)	Open water of ocean and coastal zone.	Not expected.	No potential to occur in Project Area due to lack of suitable habitat.
Vireo bellii pusillus	Least Bell's vireo	FE/SE (nesting)	Nests in southern willow scrub with dense cover within three to six feet of the ground; habitat includes willows, cottonwoods, baccharis, and wild blackberry.	Known to occur within Cañada Gobernadora, middle San Juan Creek (between the Ortega Highway bridge and Casper Wilderness Park), Chiquita Creek, and lower Cristianitos Creek.	Known to nest in San Juan Creek between PA 3 and PA 4 and Cañada Gobernadora that will be crossed by K Street and Cow Camp Road.
			Mammals		
Antrozous pallidus	Pallid bat	None/SSC	Arid habitats, including grasslands, shrublands, woodlands and forests; for roosting, prefers rocky outcrops, cliffs and crevices with access to open habitats for foraging.	Known to occur within Cañada Chiquita and Cristianitos Canyon. May occur throughout the study area within suitable habitat.	High potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Not expected to roost in Project Area due to lack of suitable habitat.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	None/SSC	Coastal sage scrub, grassland, sage scrub-grassland ecotones, and sparse chaparral; rocky substrates, loams and sandy loams.	Suitable habitat for this species occurs within the southern portion of the study area, and it may occur within the southern portion of the study area.	High potential to occur in coastal sage scrub and grassland-coastal sage scrub ecotone in Project Area/
Chaetodipus californicus femoralis	Dulzura pocket mouse	None/SSC	Coastal sage scrub, chaparral, and riparian-scrub ecotone; more mesic areas.	Suitable habitat for this species occurs within the southern portion of the study area, and it may occur within the southern portion of the study area.	High potential to occur in coastal sage scrub and chaparral in Project Area.

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Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC, SC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, also man-made structures and tunnels.	May occur throughout the study area within suitable habitat.	Moderate potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Not expected to roost in Project Area due to lack of suitable habitat.
Euderma maculatum	Spotted bat	None/SSC	Foothills, mountains, desert regions of Southern California, including arid deserts, grasslands, and mixed conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes.	May occur throughout the study area within suitable habitat.	Moderate potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Not expected to roost in Project Area due to lack of suitable habitat.
Eumops perotis californicus	Western mastiff bat	None/SSC	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees and tunnels.	Known to occur within the areas of San Juan Creek and Cristianitos Canyon. May occur throughout the study area within suitable habitat.	Moderate potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Not expected to roost in Project Area due to lack of suitable habitat.
Lasionycteris noctivagans	Silver-haired bat	None/SAL	Old growth forest, maternity roosts in trees (primarily woodpecker hollows), large diameter snags 50 ft above ground; hibernates in hollow trees, under sloughing bark, in rock crevices, and occasionally in buildings, mines and caves; forages in or near coniferous or mixed deciduous forest, often following stream or river drainages.	Could roost in trees throughout the study area.	Moderate potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Moderate potential to roost in Project Area in riparian and woodland and forest.

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Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Lasiurus blossevillii	Western red bat	None/SSC	Forages along open streams and rivers; roosts in tree canopy in forest, woodland, riparian, mesquite bosque and orchards, including fig, apricot, peach, pear, almond, walnut, and orange.	Could roost in trees throughout the study area in the winter.	Moderate potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Moderate potential to roost in Project Area in riparian and woodland and forest.
Lasiurus cinereus	Hoary bat	None/SAL	Forest, woodland riparian, and wetland habitats, also juniper scrub, riparian forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities, such as woodpecker holes.	Could roost in trees throughout the study area.	Moderate potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Moderate potential to roost in Project Area in riparian and woodland and forest.
Lepus californicus bennettii	San Diego black-tailed jackrabbit	None/SSC	Arid habitats with open ground; grasslands, coastal sage scrub, agriculture, disturbed areas, and rangelands.	Although suitable habitat for this species is present throughout the study area, this species has not been observed within the study area.	Low potential to occur in Project Area due to lack of historical observations.
Macrotus californicus	California leaf-nosed bat	None/SSC	Riparian woodlands, desert wash, desert scrub; roosts in mines and caves, occasionally buildings.	May occur within the study area.	Moderate potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Not expected to roost in Project Area due to lack of suitable habitat.
Myotis ciliolabrum	Western small-footed myotis	None/SAL	Arid woodlands and shrublands, but near water; roosts in caves, crevices, mines, abandoned buildings	May occur throughout the study area within suitable habitat.	High potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Not expected to roost in Project Area due to lack of suitable habitat.

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Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Myotis thysanodes	Fringed myotis	None/SAL	Primarily drier woodlands, including oak, pinyon-juniper, ponderosa pine, and also desert scrub, mesic coniferous forest, grassland, and sage-grass steppe from sea level to 9,350 feet; roosts in crevices in buildings, mines, rocks, cliff faces, and bridges, and large, decadent trees and snags	May occur throughout the study area within suitable habitat.	High potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Moderate potential to roost in Project Area in riparian and woodland and forest.
Myotis volans	Long-legged myotis	None/SAL	Primarily coniferous forests, but also seasonally in riparian and desert habitats; roosts in crevices in cliffs, caves, mines, buildings, exfoliating tree bark, and snags.	May occur throughout the study area within suitable habitat.	High potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Moderate potential to roost in Project Area in riparian and woodland and forest.
Myotis yumanensis	Yuma myotis	None/SAL	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees;	Known to occur within the study area within suitable habitat.	High potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Moderate potential to roost in Project Area in riparian and woodland and forest.
Neotoma lepida intermedia	San Diego desert woodrat	None/SSC	Coastal sage scrub, chaparral, and pinyon-juniper woodland with rock outcrops, cactus thickets, dense undergrowth.	Known to occur throughout the study area within suitable habitat.	Known to occur in PA 3, with 2 occurrence locations. Expected to occur throughout coastal sage scrub and more xeric forms of chaparral in Project Area.

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Special-Status Wildlife Species Known or With Potential to Occur in the Planning Areas 3 and 4 Project Area and Vicinity

Scientific Name[1,2]	Common Name	Status Federal/State	Primary Habitat Associations	Occurrence in Rancho Mission Viejo Study Area	Occurrence in PA 3/4 Project Area
Nyctinomops femorosaccus	Pocketed free-tailed bat	None/SSC	Arid lands, including pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, palm oases; roosts in high cliffs or rock outcrops with dropoffs, caverns, buildings.	May occur throughout the study area within suitable habitat.	Moderate potential to forage in coastal sage scrub, chaparral, riparian, woodland and forest, grassland, and agriculture. Not expected to roost in Project Area due to lack of suitable habitat.
Onychomys torridus ramona	Southern grasshopper mouse	None/SSC	Grassland and sparse coastal sage scrub.	Suitable habitat for this species occurs throughout the study area, but has not been documented during various trapping studies.	Very low potential to occur due to lack of documented occurrences in Project vicinity.
Perognathus longimembris pacificus	Pacific pocket mouse	FE/SSC	Grassland and coastal sage scrub with sandy soils; along immediate coast.	Not expected within the study area, due to this species' range restriction to areas along the coast.	Not expected to occur in Project Area.
Taxidea taxus	American badger	None/SSC	Dry, open treeless areas, grasslands, and coastal sage scrub.	Known to occur throughout the study area within suitable habitat.	Moderate potential to occur in grassland, agriculture, and sparse coastal sage scrub in Project Area.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Abronia villosa var. *aurita*	Chaparral sand-verbena	None/None/List 1B.1	Chaparral, coastal sage scrub, sandy soils/annual herb/January-August.	No records in SSHCP database. Known from Alberhill quadrangle, but may be extirpated from Orange County.	No records for Project Area and not expected to occur.
Allium munzi	Munz's onion	FE/ST/List 1B.1	Chaparral, cismontane woodland, coastal sage scrub, pinyon and juniper woodland, Valley and foothill grassland, clay soils/perennial herb (bulbiferous)/March-May	No records in SSHCP database. Known from Alberhill quadrangle.	Not expected to occur in Project Area.
Arctostaphylos rainbowensis	Rainbow manzanita	None/None/List 1B.1	Chaparral/perennial evergreen shrub/December-March.	No records in SSHCP database. Known from Margarita Peak and Sitton Peak quadrangles.	Not expected to occur in Project Area.
Artemisia palmeri	San Diego sagewort	None/None/List 4.2	Chaparral, coastal sage scrub, riparian, sandy soils/shrub/May-September.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Astragalus brauntonii	Braunton's milk-vetch	FE/None/List 1B.1	Closed-cone conifer forest, chaparral, coastal sage scrub, valley and foothill grassland, recent burns or disturbed areas/perennial herb/March-July.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Atriplex coulteri	Coulter's saltbush	None/None/List 1B.2	Coastal bluff scrub, coastal sage scrub, valley and foothill needlegrass grasslands, alkaline or clay soils/perennial herb/March-October.	Coulter's saltbush is known from three general locations in the study area totaling 3,086 individuals: Chiquita Canyon, upper Cristianitos Canyon and upper Gabino Canyon. Coulter's saltbush occurs in alkaline soils and is associated with southern tarplant in Chiquita Canyon.	No records for Project Area and not expected to occur. Known from nearby locations.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Atriplex pacifica	South Coast saltscale	None/None/List 1B.2	Coastal bluff scrub, coastal sage scrub, alkali playas/annual herb/ March-October.	No records in SSHCP database. Known from San Clemente quadrangle.	No records for Project Area and not expected to occur.
Atriplex parishii	Parish's brittlescale	None/None/List 1B.1	Alkali swales, sinks, depressions, and grasslands with heavy clay-alkali components/annual herb/June-October.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	None/None/List 1B.2	Coastal bluff scrub, coastal sage scrub, alkaline soils/annual herb/April-October.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Berberis nevinii	Nevin's barberry	FE/SE./List 1B.1	Chaparral, cismontane woodland, coastal sage scrub, riparian scrub, sandy or gravelly soils/shrub/March-April.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Bergerocactus emoryi	Golden-spined cereus	None/None/List 2B.2	Closed-cone conifer forest, chaparral, coastal sage scrub, sandy soils/shrub (stem succulent)/May-June.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Brodiaea filifolia	Thread-leaved brodiaea	FT/SE/List 1B.1	Coastal sage scrub, chaparral, grassland, vernal pools; heavy clay soils/perennial herb (bulbiferous)/ March-June.	Found in six general locations in the study area, excluding the translocated population at Forster Ranch: Chiquadora Ridge; Cristianitos Canyon; lower Gabino Canyon; Trampas Canyon; Talega ridgeline east of Northrup-Grumman; and just east of Trabuco Creek in the Arroyo Trabuco Golf Course project area. About 9,314 flowering stalks counted in about 30 discrete locations in the study area.	No records for Project Area and not expected to occur based on negative survey results.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Brodiaea jolonensis	Mesa brodiaea	None/None/None	Grassland, foothill woodland, clay soils/perennial herb/April-May.	Two locations in Cristianitos Canyon. Not tracked in CNDDB.	No records for Project Area and not expected to occur.
Brodiaea santarosae	Santa Rosa basalt brodiaea	None/None/List 1B.2	Valley and foothill grassland, basaltic/ perennial herb)/May June.	No records in SSHCP database. Known from Margarita Peak and Sitton Peak quadrangles.	No records for Project Area and not expected to occur.
California macrophylla	Round-leaved filaree	None/None/List 1B.1	Cismontane woodland, Valley and foothill grassland/annual herb/March-May.	No records in SSHCP database. Known from Alberhill quadrangle.	No records for Project Area and not expected to occur.
Calochortus catalinae	Catalina mariposa lily	None/None/List 4.2	Coastal sage scrub, chaparral, Valley and foothill needlegrass grasslands in heavy soils/perennial herb (bulbiferous)/Februar y-May.	Occurs on Chiquita Ridge, in Cañada Gobernadora, the northeast portion of the Talega development and the Saddleback Meadows area.	Known from Project Area, including 6 occurrence locations and approximately 21 individuals.
Calochortus plummerae	Plummer's mariposa lily	None/None/List 4.2	Chaparral, cismontane woodland, coastal sage scrub, lower montane conifer forest, valley and foothill grassland, granitic soils/perennial herb (bulbiferous)/May-June.	No records in SSHCP database. Known from Sitton Peak quadrangle.	No records for Project Area and not expected to occur.
Calochortus weedii var. *intermedius*	Intermediate mariposa lily	None/None/ List 1B.2	Chaparral, coastal sage scrub, coastal sage scrub-grassland ecotone, purple needlegrass grasslands/perennial herb (bulbiferous)/May-July.	Weed's-Intermediate mariposa lily hybrids generally occurs in four main areas: Chiquita Canyon/Chiquadora Ridge, Cañada Gobernadora east of the creek/northern Central San Juan Creek sub-basin, Cristianitos Canyon/southern Trampas Canyon sub-basin, and La Paz Canyon. A few scattered locations also occur in the Foothill- Trabuco	Known from Project Area, including 78 occurrence locations and approximately 8,293 individuals.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
				Specific Plan area on Saddleback Meadows. Except for the La Paz Canyon location, this species tends to occur in association with many-stemmed dudleya in the study area. There are about 144 locations in the study area with about 20,400 counted individuals	
Caulanthus simulans	Payson's jewel-flower	None/None /List 4.2	Chaparral, coastal sage scrub, sandy and granitic soils/annual herb/March-June.	No records in SSHCP database. or 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Centromadia parryi spp. *australis*	Southern tarplant	None/None/ List 1B.1	Alkali soils, sinks, depressions, and grasslands with heavy clay-alkali components/annual herb/May-November.	The largest population is in Chiquita Canyon and, including the Tesoro mitigation site, numbers more than 135,000 individuals. A large population numbering 10,000+ individuals occurs on the GERA site in Cañada Gobernadora.	Not expected to occur based on negative surveys.
Centromadia pungens spp. *laevis*	Smooth tarplant	None/None/ List 1B.1	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland/annual herb/April-September.	No records in SSHCP database. Known from Alberhill quadrangle.	No records for Project Area and not expected to occur.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's pincushion	None/None/ List 1B.1	Coastal bluff scrub (sandy),coastal dunes/annual herb/January-August	No records in SSHCP database. Known from Dana Point and San Juan Capistrano quadrangles.	No records for Project Area and not expected to occur.
Choloropyron maritimum spp. *maritimum*	Salt marsh bird's-beak	FE/SE/List 1B.2	Coastal dunes, coastal saltwater marsh and swamp/annual herb/May-October.	No records in SSHCP database. Known from Alberhill quadrangle.	No records for Project Area and not expected to occur.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Chorizanthe parryi var. *Fernandina*	San Fernando Valley spineflower	FC/SE/List 1B.1	Coastal sage scrub, sandy soils/ annual herb/April-June.	No records in SSHCP database. Known Alberhill quadrangle, but very likely extirpated in county. Only known from two locations in Los Angeles County – Laskey Mesa and Newhall Ranch.	No records for Project Area and not expected to occur.
Chorizanthe parryi var. *parryi*	Parry's spineflower	None/None/ List 1B.1	Chaparral, coastal sage scrub, sandy openings/annual herb/April-June.	No records in SSHCP database. Known from Alberhill quadrangle.	No records for Project Area and not expected to occur.
Chorizanthe polygonoides var. *longispina*	Long-spined spineflower	None/None/ List 1B.2	Chaparral, coastal sage scrub, meadows and seeps, valley and foothill grasslands, vernal pools/annual herb/April-July	No records in SSHCP database. Known from Alberhill, San Clemente and Sitton Peak quadrangles.	No records for Project Area and not expected to occur
Chorizanthe procumbens	Prostrate spineflower	None/None/ None	Chaparral, coastal sage scrub, pinyon-juniper woodland, valley needlegrass grassland; associated with weathered mesa soils and gabbroic clay/April-June.	No locations in SSHCP database, but found along Cristianitos Road south of RMV property.	No records for Project Area and not expected to occur.
Clinopodium chandleri	San Miguel savory	None/None/ List 1B.2	Chaparral, oak woodlands, oak forest, shaded stream courses/perennial herb/March-July.	No records in SSHCP database. Known from Upper Hot Spring Canyon in CNF and Alberhill, Sitton Peak and Cañada Gobernadora quadrangles.	No records for Project Area and not expected to occur.
Comarostaphylis diversifolia spp. *diversifolia*	Summer holly	None/None/ List 1B.2	Chaparral/shrub (evergreen)/April-June.	No records in SSHCP database. Known from Dana Point, Sitton Peak and San Juan Capistrano quadrangles.	No records for Project Area and not expected to occur.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Dichondra occidentalis	Western dichondra	None/None/ List 4.2	Coastal sage scrub, chaparral, burned areas/perennial herb (rhizomatous)/ March-July.	Occurs in a 25-acre mapped area in the upper/middle portion of Gabino Canyon and several small populations in Cristianitos Canyon.	No records for Project Area and not expected to occur.
Dodecahema leptoceras	Slender-horned spineflower	FE/SE/List 1B.1	Chaparral, coastal sage scrub (alluvial fan)/annual herb/April-June.	No records in SSHCP database. Known from Alberhill quadrangle.	No records for Project Area and not expected to occur.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	None/None/List 1B.1	Coastal bluff scrub, coastal sage scrub, Valley and foothill needlegrass grassland/perennial herb/April-June.	No records in SSHCP database. Known from San Clemente and Dana Point quadrangles.	No records for Project Area and not expected to occur.
Dudleya cymosa spp. *ovatifolia*	Santa Monica Mountains dudleya	FT/None/List 1B.2	Chaparral, coastal sage scrub, volcanic substrates/perennial herb/March-June.	No records in SSHCP database. Known only from Santiago Peak quadrangle.	No records for Project Area and not expected to occur.
Dudleya multicaulis	Many-stemmed dudleya	None/None/ List 1B.2	Coastal sage scrub, chaparral, Valley needlegrass grasslands; mesic barrens and cobbly clay soils/ [perennial herb/April-July.	Known from five main areas in the study area: Chiquita Ridge; Chiquadora Ridge; Cañada Gobernadora/Central San Juan east of Gobernadora Creek and north of ColorSpot Nursery; Trampas Canyon/Cristianitos Canyon extending south to the Talega development in the San Clemente Watershed; and upper Gabino and La Paz canyons. A smaller cluster occurs east of the Northrup-Grumman facilities on the mesa. There also is a single record for the Bell Canyon area on Starr Ranch (F. Roberts 1997) and locations in Caspers Wilderness Park not in the database, but	Known from Project Area, including 78 occurrence locations and approximately 6,326 individuals. PA 3 supports a *Major Population/Key Location* and an *Important Population/Key Location*, as identified in the SSHCP.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
				these populations are considered to be small. The total counted individuals in the study area is about 47,200 in about 284 mapped locations.	
Dudleya stolonifera	Laguna Beach dudleya	FT/ST/List 1B.1	Chaparral, cismontane woodland, coastal sage scrub, valley and foothill grassland, rocky areas/perennial herb/May-July.	No records in SSHCP database. Known from San Juan Capistrano quadrangle.	No records for Project Area and not expected to occur.
Dudleya viscida	Sticky dudleya	None/None/ List 1B.2	Coastal bluff scrub, coastal sage scrub, chaparral; on shaded steep rocky cliffs and canyon walls/perennial herb/May-June.	No records in SSHCP database. Known from Cañada Gobernadora, Margarita Peak and Sitton Peak quadrangles.	No records for Project Area and not expected to occur.
Echinodorus berteroi	Upright burhead	None/None/ None	Ponds and ditches/annual herb/August.	One location known from Upper Cristianitos. Not tracked in CNDDB.	No records for Project Area and not expected to occur.
Eleocharis parvula	Small spikerush	None/None/List 4.3	Saltmarsh/perennial herb/June-September.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Eryngium pendletonensis	Pendleton button-celery	None/None/ List 1B.1	Coastal bluff scrub, Valley and foothill grassland, vernal pools, clay, vernally mesic/perennial herb/April-July.	No records in SSHCP database. Known from San Clemente quadrangle.	No records for Project Area and not expected to occur.
Euphorbia misera	Cliff spurge	None/None/ List 2B.2	Sea bluffs, coastal sage scrub/shrub/December-August.	No records in SSHCP database. Known from Dana Point and San Juan Capistrano quadrangles.	No records for Project Area and not expected to occur.
Harpagonella palmeri	Palmer's grapplinghook	None/None/ List 4.2	Open patches of coastal sage scrub, coastal sage scrub-grassland ecotone, purple needlegrass grassland/annual herb/March-May.	Occurs on Chiquita Ridge, east of Gobernadora Creek and in Cristianitos Canyon.	Known from Project Area, including 40 occurrence locations and approximately 3,370 individuals.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Hesperocyparis forbesii	Tecate cypress	None/None/ List 1B.1	Closed-cone coniferous forest, chaparral, clay, gabbroic, metavolcanic/perennial evergreen tree.	No records in SSHCP database. Known from Alberhill and Santiago Peak quadrangles.	No records for Project Area and not expected to occur.
Holocarpha virgata ssp. *elongate*	Graceful tarplant	None/None/ List 4.2	Coastal sage scrub, valley and foothill needlegrass grasslands, chaparral, and cismontane woodland/annual herb/July-November.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Hordeum intercedens	Vernal barley	None/None/ List 3.2	Valley and foothills grasslands (saline flats and depressions), vernal pools/ annual herb/March-June.	Populations known from Cañada Gobernadora, Cristianitos Canyon, and the northeastern portion of the Talega development project area.	Known from Project Area, including 6 occurrence locations and approximately 5,389 individuals.
Horkelia cuneata ssp. *puperula*	Mesa horkelia	None/None/ List 1B.1	Chaparral (maritime), coastal sage scrub, cismontane woodland/perennial herb/February-September.	No records in SSHCP database. Known from Alberhill and Sitton Peak quadrangles.	No records for Project Area and not expected to occur
Horkelia truncata	Ramona horkelia	None/None/ List 1B.3	Chaparral, cismontane woodland, clay and gabbroic soils/perennial herb/May-June	No records in SSHCP database. Known from Margarita Peak quadrangle.	No records for Project Area and not expected to occur
Imperata brevifolia	California satintail	None/None/ List 2B.1	Chaparral, coastal scrub, Mojavean desert scrub, meadows and seeps, riparian scrub/perennial rhizomatous herb/September-May.	No records in SSHCP database. Known from Cañada Gobernadora quadrangle.	No records for Project Area and not expected to occur.
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	None/None/ List 1B.2	Exposed areas on coastal bluffs, coastal bluff scrub/shrub/April-November.	No records in SSHCP database. Known from the Laguna Beach quadrangle.	No records for Project Area and not expected to occur.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Juncus acutus spp. *leopoldii*	Southwestern spiny rush	None/None/ List 4.2	Coastal dunes, meadows and seeps (alkaline), saltwater marsh/perennial herb/May-June.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Lasthenia glabrata spp. *coulteri*	Coulter's goldfields	None/None/ List 1B.1	Saltwater marsh and swamps, playas, vernal pools/annual herb/February-June.	No records in SSHCP database. Known from Lake Elsinore, Newport Beach, Laguna Beach and Seal Beach quadrangles.	No records for Project Area and not expected to occur.
Lepechinia cardiophylla	Heart-leaved pitcher sage	None/None/ List 1B.2	Chaparral above 1,000 feet, cismontane woodland, conifer forest/ shrub/April-November.	No records in SSHCP database. Two populations known from Trabuco Peak in CNF. Known from Alberhill and Santiago Peak quadrangles.	No records for Project Area and not expected to occur.
Lepidium virginicum var. *robinsonii*	Robinson's pepper-grass	None/None/ List 4.3	Chaparral, coastal sage scrub/annual herb/January-July.	No records in SSHCP database. Known from Alberhill, El Toro, Margarita Peak and Santiago Peak, quadrangles.	No records for Project Area and not expected to occur.
Lilium humboldtii spp. *ocellatum*	Ocellated Humboldt lily	None/None/ List 4.2	Oak woodland and stream courses in foothill-mountain transition zone/ perennial herb (bulbiferous)/March-July.	Suitable habitat on Starr Ranch, Caspers Wilderness Park and in the CNF.	No records for Project Area and not expected to occur.
Lilium parryi	Lemon lily	None/None/ List 1B.2	Lower and upper montane coniferous forest, meadows and seeps, riparian forest/ perennial herb (bulbiferous)/July-August	No records in SSHCP database. Known from Sitton Peak quadrangle.	No records for Project Area and not expected to occur.
Microseris douglasii var. *platycarpha*	Small-flowered microseris	None/None/ List 4.2	Cismontane woodland, coastal sage scrub, valley and foothill grassland, clays/annual herb/March-May.	Populations known from Cañada Gobernadora and Cristianitos Canyon.	Known from Project Area, including 5 occurrence locations and approximately 25 individuals.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Mimulus clevelandii	Cleveland's bush monkeyflower	None/None/ List 4.2	Chaparral, lower montane conifer forest (often in disturbed areas)/ perennial herb/May-July.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Mimulus diffusus	Palomar monkeyflower	None/None/ List 4.3	Chaparral, lower montane conifer forest/annual herb/April- June.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Monardella hypoleuca spp. *lanata*	Felt-leaved monardella	None/None/ List 1B.2	Chaparral, cismontane woodland/ perennial herb/May-July.	No records in SSHCP database. Known from Alberhill, Sitton Peak and Santiago Peak quadrangles.	No records for Project Area and not expected to occur.
Mondardella macrantha ssp. *hallii*	Hall's monardella	None/None/ List 1B.3	Broad-leaved upland forest, chaparral, cismontane woodland, lower conifer forest, valley and foothill grassland/ perennial herb/June-August.	No records in SSHCP database. Known from Alberhill, Sitton Peak, and Santiago Peak quadrangles.	No records for Project Area and not expected to occur.
Mucronea californica	California spineflower	None/None/ List 4.2	Chaparral, cismontane woodland, coastal dunes, coastal sage scrub, valley and foothill grassland, sandy soils/annual herb/March-August.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Myosurus minimus spp. *apus*	Little mousetail	None/None/ List 3.1	Vernal pools (alkaline)/annual herb/March-June.	No records in SSHCP database. Known from San Clemente quadrangle	No records for Project Area and not expected to occur.
Nama stenocarpum	Mud nama	None/None/ List 2B.2	*Marsh and swamps, lake margins and riverbanks/annual-perennial herb/ January-July.*	Known from vernal pool on Chiquita Ridge, and the margin of stockponds located between Trampas and Cristianitos canyons and west of an RMV residence south of Ortega Highway.	No records for Project Area and not expected to occur.
Nasturtium gambellii	Gambel's water cress	FE/ST/List 1B.1	Marsh and swamps (freshwater and brackish)/perennial herb/April-June.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Navarretia fossalis	Spreading navarretia	FT/None/ List 1B.1	Chenopod scrub, shallow freshwater marsh and swamps, vernal pools/ annual herb/April-June.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Navarretia prostrata	Prostrate vernal pool navarretia	None/None/ List 1B.1	Coastal scrub, meadows and seeps, Valley and foothill grasslands (alkalkine), vernal pools/annual herb/April-May.	No records in SSHCP database. Known from San Clemente quadrangle.	
Nolina cismontana	Chaparral nolina	None/None/ List 1B.2	Chaparral and coastal sage scrub; mostly associated with Cieneba sandy loam and Cieneba-Rock outcrop complex/shrub (evergreen)/May-July.	Occurs in two areas in study area: east of Live Oak Canyon Road and on the steep, south-facing slopes east of the Northrup-Grumman facility.	No records for Project Area and not expected to occur.
Ophioglossum californicum	California adder's-tongue	None/None/ List 4.2	Chaparral, valley and foothill grassland, vernal pools (margins)/ perennial herb/December-May.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Orcuttia californica	California Orcutt grass	FE/SE/List 1B.1	Vernal pools/annual herb/April-June.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Pentachaeta aurea ssp. *aurea*	Golden-rayed pentachaeta	None/None/ List 4.2	Cismontane woodland, coastal sage scrub, lower montane conifer forest, valley and foothill grassland/annual herb/March-May.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Pentachaeta aurea ssp. *allenii*	Allen's pentachaeta	None/None/ List 1B.1	Coastal sage scrub (openings), Valley and foothill grassland/annual herb/March-June.	No records in SSHCP database. Known from Dana Point, El Toro and San Juan Capistrano quadrangles.	No records for Project Area and not expected to occur.
Phacelia keckii	Santiago Peak phacelia	None/None/ List 1B.3	Closed-cone conifer forest, chaparral/ annual herb/May-June.	No records in SSHCP database. Known from Santiago Peak quadrangle.	No records for Project Area and not expected to occur.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Piperia cooperi	Chaparral rein orchid	None/None/ List 4.2	Chaparral, cismontane woodland, valley and foothill grassland/annual herb/March-July.	One location known from Central San Juan subunit north of San Juan Creek.	Known from Project Area, including 1 occurrence location and approximately 6 individuals.
Polygata cornuta var. *fishiae*	Fish's milkwort	None/None/ List 4.3	Chaparral, cismontane woodland, riparian woodland/shrub/May-August.	Known only from Gabino Canyon.	No records for Project Area and not expected to occur.
Pseudognaphalium leucocephalum	White rabbit-tobacco	None/None/ List 2B.2	Chaparral, cismontane woodland, coastal sage scrub, riparian woodland, sandy, gravelly soils/perennial herb/July-December.	No records in SSHCP database. Known from Cañada Gobernadora, Dana Point, Margarita Peak, San Clemente, San Juan Capistrano and Sitton Peak quadrangles.	No records for Project Area and not expected to occur.
Quercus dumosa	Nuttall's scrub oak	None/None/ List 1B.1	Closed-cone coniferous forest, chaparral, coastal sage scrub, sandy, clay loam soils/perennial evergreen shrub/February-August	No records in SSHCP database. Known from Dana Point and San Juan Capistrano quadrangles.	No records for Project Area and not expected to occur.
Romneya coulteri	Coulter's matilija poppy	None/None/ List 4.2	Coastal sage scrub and chaparral, dry washes, canyons, and mesic slopes/perennial shrub/March-July.	No records in SSHCP database. , but one location known from upper Chiquita Canyon north of Oso Parkway.	No records for Project Area and not expected to occur.
Sagittaria sanfordii	Sanford's arrowhead	None/None/List 1B.2	Chaparral, oak woodlands, oak forest, shaded stream courses/perennial herb/March-July.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.
Senecio aphanactis	Chaparral ragwort	None/None/ List 2B.2	Coastal sage scrub, cismontane woodland, alkaline soils/annual herb/ January-April.	No records in SSHCP database or in 9 USGS quadrangles in study area. Known from Dana Point headlands.	No records for Project Area and not expected to occur.

Table B-2
Special-Status Plant Species Known to Occur from SSHCP Study Area and Planning Areas 3 and 4 Project Area

Scientific Name[1,2]	Common Name	Status Federal/State/ Rare Plant Rank	Primary Habitat Associations/ Form/Blooming Period	Occurrence in Study Area	Occurrence in PA 3/4 Project Area
Sidalcea neomexicana	Salt Spring checkerbloom	None/None/ List 2B.2	Chaparral, coastal sage scrub, lower montane conifer forest, Mojavean Desert scrub, seeps, playas, alkaline mesic areas/perennial herb/March-June.	Known from two slope wetlands in Chiquita Canyon and one slope wetland in Cañada Gobernadora.	Known from Project Area, including 1 occurrence location and approximately 3 individuals.
Suaeda esteroa	Estuary seablite	None/None List 1B.2	Saltmarsh/perennial herb/July-October.	No records in SSHCP database. Known from San Clemente quadrangle.	No records for Project Area and not expected to occur.
Symphyotrichum defoliatum	San Bernardino aster	None/ None/ 1B.2	Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Marshes and swamps, Valley and foothill grassland(vernally mesic)/near ditches, streams, springs/ perennial rhizomatous herb/ July-November.	No records in SSHCP database. Known from Alberhill quadrangle	No records for Project Area and not expected to occur.
Tetracoccus dioicus	Parry's tetracoccus	None/None/ List 1B.2	Chaparral and coastal sage scrub on gabbroic soils/shrub (deciduous)/April-May.	No records in SSHCP database. Known from Sitton peak quadrangle.	No records for Project Area and not expected to occur.
Verbesina dissita	Big-leaved crownbeard	FT/ST/List 1B.1	Maritime chaparral, coastal sage scrub/perennial herb/April-July.	No records in SSHCP database. Known from San Juan Capistrano quadrangle.	No records for Project Area and not expected to occur.
Viguiera laciniata	San Diego County viguiera	None/None/ List 4.2	Chaparral, coastal sage scrub/ shrub/February-June.	No records in SSHCP database or in 9 USGS quadrangles in study area. Known from northern San Diego County near San Clemente.	No records for Project Area and not expected to occur.
Xanthisma junceum	Rush-like bristleweed	None/None/ List 4.3	Chaparral, coastal sage scrub/ perennial herb/June-October.	No records in SSHCP database or in 9 USGS quadrangles in study area.	No records for Project Area and not expected to occur.

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Permits: PA140072 (PA3 & PA4 Addendum)

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX C

CULTURAL RESOURCES MANAGEMENT PROGRAM FOR PA 3 AND PA 4 MASTER AREA PLANS

PLANNING AND ZONING CLEARANCE

THESE PLANS AND DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN COMPLIANCE WITH THE APPLICABLE LAND USE REGULATIONS. ISSUANCE OF A PERMIT IS RECOMMENDED SUBJECT TO APPROVAL BY OTHER DEPARTMENTS AND ANY NOTED CONDITIONS. THIS APPROVAL DOES NOT RELIEVE THE ENGINEER OF RECORD OF THEIR RESPONSIBILITY TO PREPARE THE PLANS, SPECIFICATIONS, MAPS, AND OTHER RECORD DOCUMENTS PER CURRENT CODES AND APPLICABLE STANDARDS OF PRACTICE.

ATKINS NORTH AMERICA, INC.

February 20, 2015

Signature
Date:

PA140072

CULTURAL RESOURCES MANAGEMENT PROGRAM FOR PA 3 AND PA 4 MASTER AREA PLANS

Carol R. Demcak, RPA

Of:

Archaeological Resource Management Corporation
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For:

Rancho Mission Viejo, LLC
P.O. Box 9
San Juan Capistrano, CA 92693

October 8, 2014

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CULTURAL RESOURCES MANAGEMENT PLAN FOR PA 3 and PA 4 MASTER AREA PLANS

1.0 INTRODUCTION

This Cultural Resources Management Plan has been developed to comply with the following mitigation measures contained in Final EIR 589 for The Ranch Plan Planned Community as revised in the Regulation Compliance Matrix of the Ranch Plan Guidance Document (County of Orange, 2011):

Mitigation Measure 4.11-1:

Prior to the approval of each Master Area Plan, the project applicant shall prepare a Cultural Resources Management Plan (CRM) Plan to address the presence of cultural resources, evaluate the significance of any resource finds, provide final mitigation and monitoring program recommendations, and determine proper retention or disposal of resources. The CRM Plan shall be reviewed and approved by the County Director of Planning.

Mitigation Measure 4.11-3

As applicable, the following archaeological sites shall be mitigated to a less than significant level: CA-ORA-656, -753, -754, - 882, -1043, -1048, -1121, -1122, -1125, -1137, 1144, -1185, -1449, -1556, -1559, -1560, and -1565, and historic sites CAORA-29, 30-176631, 30‑ 176633, 30-176634, and 30-176635. Based on the mitigation standards set forth in the California Environmental Act (CEQA) Guidelines §15126.4(b) and Public Resources Code §21083.2, mitigation shall be accomplished through implementation of one of the following mitigation options consistent with the Cultural Resources Management Plan:

a. Relocation of grading boundaries/fuel modification zones to completely avoid disturbance to the site(s). Should the boundary relocation be infeasible, an archaeological monitor shall be present during grading and fuel modification brush clearance in the vicinity of archaeological resources. Fencing or stakes shall be erected outside of the sites to visually depict the areas to be avoided during construction.

b. Prior to grading in the vicinity of archaeological resources (note: confidential archaeological mapping is on file at the County of Orange), Phase III data recovery (salvage excavations) shall be conducted for these archaeological sites or any other sites within the potential impact area of development that cannot be avoided. The Phase III work shall provide sufficient scientific information to fully mitigate the impacts of development on these sites and be performed in accordance with standards of the State Office of Historic Preservation.

In accordance with California Health and Safety Code Section 7050.5, if human remains are found, no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined the appropriate treatment and disposition of the human remains. The County Coroner shall make such determination within two working days of notification of discovery. The County Coroner shall be notified within 24 hours of the discovery. If the County Coroner determines that the remains are or believed to be Native American, the County Coroner shall notify the Native American Heritage Commission in Sacramento within 24 hours.

In accordance with California Public Resources Code Section 5097.98, the Native American Heritage Commission must immediately notify those persons it believes to be the most likely descended from the deceased Native American. The descendants shall complete their inspection within 24 hours of notification. The designated Native American representative would then determine, in consultation with the property owner, the disposition of the human remains.

This Cultural Resources Management Plan for Planning Area 3 (PA 3) and Planning Area 4 (PA 4) Master Area Plans provides mitigation measures for two archaeological sites that have been determined to be National Register of Historic Places (NRHP) eligible in a formal review process and that are predicted to be impacted by the proposed PA 3 Master Area Plan. No significant archaeological resources sites will be impacted by the proposed development of PA 4 Master Area Plan. The PA 3 impacted sites qualify as historic properties, therefore impacts to them must be reduced to a less than significant level by the proposed mitigation. The outlined program will accomplish this goal. The two sites, CA-ORA-1565 and CA-ORA-1121, are located within Rancho Mission Viejo in south Orange County, California. At site CA-ORA-1565 test level investigations were carried out at the site and the site was determined to be NRHP eligible (Demcak 2002). Since avoidance of this site is not feasible, a data recovery program is the recommended mitigation for this site. Site CA-ORA-1121 was previously impacted by the SMWD Talega Valley Reclaimed Water Pipeline. Prior to construction, test level investigations were carried out at the site (Demcak et al. 1989), and the site was deemed significant. A subsequent data recovery program was carried out within the pipeline construction limits on the site in 1990 (Jones et al. 1995) followed by monitoring during construction in 1991-1992 (Julien and Demcak 1993). The site was effectively destroyed by the pipeline construction; no intact deposit is likely to be present. Thus monitoring during construction will be the recommended mitigation. The report on the salvage investigation conducted for SMWD is provided as an attachment to this report.

This proposed treatment program has been prepared by Archaeological Resource Management Corporation (ARMC) as mitigation for impacts to the two sites. The author is a Society of Professional Archeologists (SOPA) certified field archaeologist and a certified member of the Register of Professional Archaeologist (RPA). Ms. Demcak has 35 years of experience in southern California archaeology and 30 years specifically on Rancho Mission Viejo.

No significant archaeological resources sites will be impacted by the proposed development of PA 4 as noted above, however, because of the archaeological sensitivity of the areas adjacent to PA 4, the plan of mitigation will consist of monitoring during construction to guard against inadvertent impacts to unknown resources.

1.1 NATURAL SETTING

The project sites lie within the boundaries of Rancho Mission Viejo in southern Orange County (Figure 1). ORA-1565 is located adjacent to the Gobernadora Canyon drainage, a tributary of San Juan Creek. Site ORA-1121 lies just east of the Gobernadora Canyon drainage adjacent to San Juan Creek and the ranch road commonly referred to as Cow Camp. The foothills surrounding the sites are part of the Santa Ana Mountains and the Peninsular Ranges Province that stretches from the Transverse Ranges through the Los Angeles Basin to the tip of Baja California (Norris and Webb 1976). The climate of the area is Mediterranean type, with dry summers and moist winters. Rainfall averages 10-15 inches annually on the coastal plain and up to 40 inches in the interior mountains (Hornbeck 1983).

Topographically, the general project area is characterized by rolling hills, narrow ridgelines, and knolls separated by narrow canyons, localized drainages, and broad watercourses (Orange County Planning Department 1971). Elevations in the project vicinity vary from a low of 260' in the floor of San Juan Creek to a high of 500' in the terraces adjacent to Gobernadora Canyon where ORA-1565 is located.

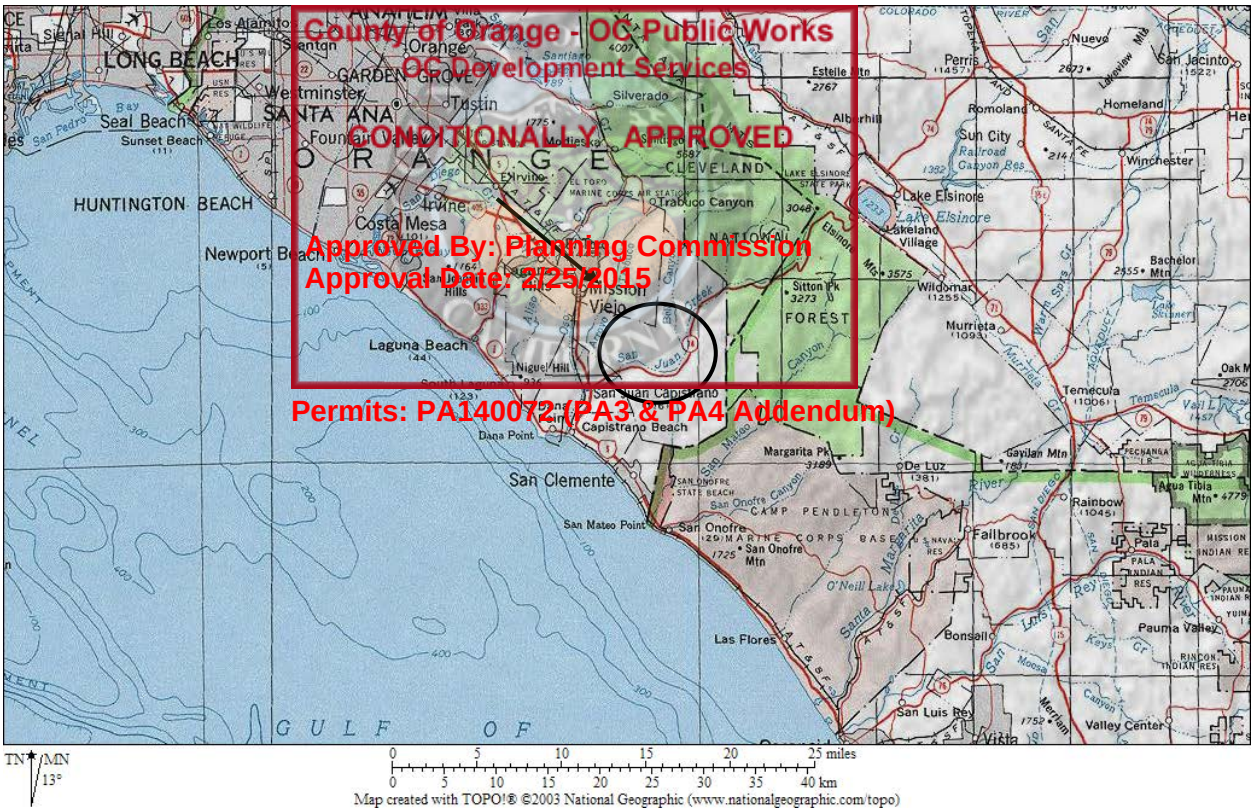

Figure 1. General Project Location.

Geologically, the study area is underlain by the marine Eocene Santiago Formation, the marine Middle Miocene Topanga and Monterey Formations, the Upper Miocene Capistrano Formation, and unnamed Quaternary and recent alluvium (Morton and Miller 1981). Soils in the study area vary from gray-brown to red-brown clayey loam on the upper terraces and knolls to light tan, sandy silty sediments with abundant cobbles on the creek bottoms and lower terraces.

Lithic raw material derived from these and other formations in the Santa Ana Mountains include the Bedford Canyon metasediments (argillite) and quartzites; the Santiago Peak volcanics (felsite, andesite, and basalt) and metavolcanics; as well as granites, quartz, chert, and chalcedony. These lithics occur as stream float in San Juan Creek. These raw materials were utilized by aboriginal populations to create chipped and ground stone tools and ornaments.

Five plant communities as defined by Munz and Keck (1959) are present in the project vicinity. These communities (Chaparral, Coastal Sage-scrub, Grassland-herbland, Oak Woodland, and Riparian) would have provided a variety of seasonal plant resources to the prehistoric and early historic inhabitants of the region. For a detailed description of these resources and their uses, see Demcak et al. (1989).

1.2 CULTURAL SETTING

1.2.1 Prehistory

Wallace (1955) and Warren (1968) have both proposed syntheses of the local cultural sequence. These summaries continue to be useful in defining the prehistoric period in southern California. The two researchers propose that aboriginal populations remained hunters and gatherers before Spanish contact.

The earliest recognized culture in southern California belongs to the Early Holocene San Dieguito Tradition (Warren 1968), a manifestation of the Western Pluvial Lakes Tradition (Moratto 1984). Defined primarily by its type site, the C.W. Harris Site (CA-SDI-149), typical San Dieguito artifacts include patinated scrapers (side and end types); scraper planes, choppers; crescentics; large leaf-shaped knives (bifaces) and projectile points. Lake Mohave and Silver Lake stemmed and shouldered point types also are found in these early assemblages. Manos and metates (hard seed grinding equipment), may be absent or are sparsely represented in the San Dieguito Tradition. It is usually characterized as a hunting tradition as opposed to the seed-gathering tradition that succeeded it in coastal and interior southern California. Sites are generally found on elevated terraces above permanent water sources and with little or no cultural deposit subsurface. Although the San Dieguito Tradition has rarely been documented in Orange County and is not reported for the Camp Pendleton area immediately south of the project area (Reddy et al. 2000), four of the recorded sites within the boundaries of Rancho Mission Viejo can be assigned to this tradition, namely CA-ORA-1449, -1551, -1553, and -1557 (Demcak 2000).

The Milling Stone Horizon, or Encinitas Tradition, is the earliest occupation that has been properly documented for Orange County. Highly mobile populations adapted to a littoral, or non-marine, environment during this occupation. Small native groups gathered plant foods, including seeds, tubers, and berries, collected shellfish, and hunted small and large game. They used milling stone and muller, more commonly called metate and mano, to grind seeds. Hunting tools included wide, thick, and heavy projectile points. They were presumably utilized as spear points, based on their weights (Fenenga 1953), and launched by atlatls, or wooden spear-throwers. Cogstones and discoidals, wheel-shaped and disc-shaped ceremonial stones respectively, and red argillite beads (Demcak 1999) are diagnostic artifacts, or time-markers, for this earliest known occupation in Orange County.

During the subsequent Intermediate Horizon, or Campbell Tradition, prehistoric populations expanded their resource base to include more hunting and fishing. The mortar and pestle, tools associated with the processing of acorns and other fleshy plant foods, were introduced into the area. Projectile points remained relatively large and heavy.

In the final prehistoric occupation, the Late Horizon Cultures (Shoshonean and Hokan speakers), local economies expanded markedly. Artifact assemblages reveal an increase in the number and types of tools,

reflecting population growth and task specialization. Non-utilitarian items, such as beads and ornaments, were also on the increase in the Late Horizon compared to earlier occupations. Local groups continued to rely primarily upon plants, shellfish, and terrestrial game, which they hunted with small, lightweight arrow points and the bow.

Steatite, obsidian, and other non-local lithic resources were traded into the study area. Pottery was introduced into Kumeyaay and Ipai-Tipai territory in San Diego County and small quantities reached Orange County in the very late prehistoric or early historic period. Pestles and portable mortars, especially of the basket-hopper type, and bedrock mortars were utilized locally for acorn processing. Seed grinding continued to be carried out with manos and metates, as well as on bedrock grinding slicks.

1.2.2 Ethnohistory

Ethnographically, the study area falls within the territory of the Juaneño people. The Juaneños were named by their association with the Mission San Juan Capistrano. They are closely related to the Luiseños, who were associated with the Mission San Luis Rey (Bean and Smith 1978; Bean and Shipek 1978). Shoshoneans, they are Takic speakers of the wider Uto-Aztecan family of languages. Uto-Aztecan speakers are presumed to have entered California prior to 2000 B.C. (Moratto 1984:541) and perhaps arrived in the Los Angeles Basin by 1000 B.C. (Kowta 1969:50).

Hunter-gatherers, these Native populations exploited a diverse set of microenvironments from the coast, coastal plain, foothills, Santa Ana Mountains, to the interior valleys of southern California. Their territory is traditionally described as bounded on the north by Gabrielino territory at Aliso Creek. However, David Belardes (pers. comm.), member of the Juaneño Band of Mission Indians, asserts that the northern boundary of Juaneño territory was actually the mouth of the Santa Ana River. Inland, their territory extended to the upper reaches of the Santa Ana Mountains where it adjoined Luiseño territory. Southward, Juaneño territory reportedly extended to the area between the San Onofre and Las Pulgas drainages (Kroeber 1925:636) and westward to the Pacific Ocean.

With the coming of the Spanish in 1769, Native populations were brought into the mission system and forced to adapt to a new social and economic order with drastic consequences for the Natives. Their populations were radically reduced in number and their aboriginal way of life was largely eliminated. Certain populations, among them Juaneños who managed to escape into the interior mountains, were spared the forced acculturation for a short time. Then they too were overwhelmed by Spanish, Mexican, and later American Period developments. Despite considerable hardship, many of their descendents still live and work in the area surrounding the Mission San Juan Capistrano.

The Juaneño Band, or Acjachemem Nation, strives to keep its distinct culture and language from extinction. After decades of struggle for recognition, the band was formally recognized by the California State Legislature in September, 1993 as the "...original native tribe of Orange County" (Hall 1993:A3). Band members continue to seek federal recognition as a tribe and have recently learned that the Federal Government has agreed to review their case for tribal status.

1.2.3 Historical Overview

The arrival of the Portolá Expedition in 1769 marked the first efforts at extending Spanish control into Alta California through the establishment of Catholic missions. This move by the Spanish King Carlos III was intended to protect Pacific Coast shipping against Russian or English occupation of the area. Beginning in San Diego, the padres surveyed the lands as far north as Monterey Bay and secured them for the Spanish Crown. Mission sites were selected on the way north by Fathers Crespi and Gomez (Hallan-Gibson 1986).

The Portolá party arrived in Orange County on July 22, 1769, at a site in Cristianitos Canyon where two sick children were baptized by the fathers. The following day the travelers camped near the Mission Vieja site (CA-ORA-29) at the mouth of Gobernadora Canyon. The next day the expedition continued northwestward and out of the survey area to the western edge of the Plano Trabuco and camped at the San Francisco Solano campsite at the present location of the Trabuco Adobe. Altogether they stopped at seven campsites (Smith 1965) in what became Orange County.

Missions, presidios, and pueblos were established by the Franciscan fathers, and in 1775, the Mission San Juan Capistrano was begun. Within days, however, a Native American uprising at the mission in San Diego forced the fathers to abandon the local mission, hastily bury its bells, and with the soldiers hurry southward to assist their fellow priests. The fathers returned the following year to re-establish the mission at a different site. There on November 1, 1776, the mission was officially founded. On October 4, 1778, the mission was removed to its present location closer to the Arroyo Trabuco, a dependable water source (Hallan-Gibson 1986). Substantially expanded in 1784, the mission continues in use and is believed to be the oldest building extant in California, according to Friis (1965).

The Native inhabitants were brought under the control of the mission. They were converted to Catholicism and provided the mission with a large labor pool. The padres taught them the necessary skills to grow crops, tend cattle, grow grapes and produce wine, pottery and other crafts. The missions intended to prepare them to look after their own lands, which were held in trust for them. Spanish legislators called for the dissolution of the missions and the transfer of land ownership to the native populations as early as 1813. However, it was not until the Mexican Period that secularization was begun.

At the end of the Mexican Revolution, mission lands were seized and turned over to Mexican citizens of the Catholic faith and of good character. The Mission San Juan Capistrano was the first mission to be secularized in 1834. A pueblo for Native Americans was set up at Mission San Juan Capistrano, but, after years of mismanagement, failed (Dixon 1988; Hallan-Gibson 1986). A town was instead chartered and land became available to petitioners, including the Native Americans. Eventually, the town itself failed, and the mission was sold by Governor Pio Pico to his brother-in-law, John Forster and James McKinley, a trader (Hallan-Gibson 1986). Forster maintained his residence at the mission until he moved his family to the Mission Viejo Adobe (Van Wormer 2002).

The Spanish Crown issued a series of land grants, or grazing rights. The land between the Santa Ana and San Gabriel rivers was given to Manuel Nieto in 1784; this was the first land grant in Orange County. The second, called Rancho Santiago de Santa Ana, went to Juan Grijalva and Jose Yorba, his son-in-law. The grant was confirmed in 1810 to Yorba and Grijalva's grandson (Hallan-Gibson 1986). There followed a period of growth and development as rancheros built adobe homes, ran large herds of cattle and sheep, engaged in foreign trade, and dabbled in politics.

California was drawn into the Mexican-American War in 1846, and Governor Pico fled the oncoming American Army. His son-in-law John Forster, an American sympathizer, tipped off the Union soldiers marching through Orange County that a large contingent of enemy soldiers was on its way. This may have saved their force from defeat by 600 Mexicans (Hallan-Gibson 1986). After the Treaty of Guadalupe Hidalgo ended the war in 1848 and California entered the Union, the land claims of the rancheros were scheduled to be upheld, but subsequent laws required the land owners to prove their claims, requiring considerable time and expense. The courts eventually confirmed most of the land claims in Orange County.

In the American Period, life on the ranchos continued much as before although squatters, rustlers, and mounting debts grew troublesome. Large landholdings were increasingly broken up; towns and settlements grew in number. Mission San Juan Capistrano was returned to the Catholic Church in 1865 when the U.S. Government denied Forster's claim to the property. Forster took his family and moved southward to Rancho Santa Margarita, home of his relatives, the Picos (Hallan-Gibson 1986).

During the 1860s, severe drought, smallpox, and torrential rains alternately took their toll on the large landholders and other settlers in southern California. The cattle market collapsed, land was devalued, and a diversified economy developed. The end of the Civil War brought an impetus to settlement. Land was cheap, and thousands flocked to the Golden West. A real estate boom ensued in the 1880s. The arrival of the Union Pacific, Southern Pacific, and Santa Fe Railroad provided transportation for people and products into and out of California. Sheep ranching became highly profitable due to the scarcity of cotton in the South. Large land grants were partitioned. Development proceeded at a rapid pace through the late nineteenth and early twentieth century. Improvements in transportation and communication contributed to

the boom. The citrus industry with its associated bee keeping was one of the most successful enterprises in the area.

In the post-World War II period, southern California has been characterized by expanding urbanization, business and industry. The aerospace industry, movie and television industries, automobile manufacturing, and tourism have spurred local growth and continue to attract visitors and potential residents. The last ranchos have been developed or are in the process of being developed.

1.2.3.1 Rancho Mission Viejo, or La Paz, and O'Neill Ranch

This large rancho comprising 46,500 acres was granted to Jose Estudillo in 1841. Juan Forster acquired the holding in 1845 after having grazed his cattle there for at least a year. Forster, who played a significant role in the development of southern Orange County and northern San Diego County, was an Englishman by birth but a naturalized Mexican citizen. He was married to Pio Pico's sister, possessed vast land holdings, and was one of the wealthiest and most influential men of his day. His ranching success was partly due to an increased demand for beef that brought about a cattle boom once the gold rush had begun in 1848.

In 1882, the heirs of Juan Forster, whose land was heavily mortgaged due to various business failures, sold the Rancho Santa Margarita y Las Flores to Richard O'Neill and James C. Flood. Thus began the O'Neill Ranch, which includes the project area (Muñoz 1980b).

O'Neill, an Irishman, had come to California and established a successful ranching business and later meat-packing establishment. With his friend Flood, he acquired the Forster property. With various innovations, such as installing feedlots, O'Neill was highly successful and bought more land. The land holding reached its maximum of 260,000 acres under the care of Jerome O'Neill, Richard's son, at the turn of the century (Emmons 1974).

After Jerome's death, the ranch became the property of the Rancho Santa Margarita Corporation in 1926; and the O'Neills' stocks were held in trust. The Floods retained half interest in the corporation and ran the ranch until the 1930s when they sold their share (now Camp Pendleton) and the O'Neills divided their half interest. The land itself remained in trust. In 1943, after Richard O'Neill, Jr., died, an effort by trust officers to sell the property was halted by his widow.

Developers persisted, and in 1964, Mission Viejo Company was formed. The heirs and Richard O'Neill, Jr.'s, widow retained a 20% share of the company. Local development was initiated, and in 1972 the company was sold to the Phillip Morris Company, whose development became the Mission Viejo Planned Community. Santa Margarita Company launched its first large development, Rancho Santa Margarita, on

the upper Plano Trabuco and on the adjacent hills to the south and southeast. Development has continued southward and now includes the Las Flores and Ladera Ranch communities. The Ranch Plan (2000) is the current phase of development. PA 3 and PA 4 Area Plan are part of that development.

The O'Neill family continues to operate Rancho Mission Viejo as it has since 1882. Ranching is still being carried out in the project vicinity. Cattle herds still roam the hills and cowboys still conduct spring round-ups, repair fence lines, and patrol the range. Working windmills and cattle troughs dot the landscape.

1.3 PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

The project area was surveyed for cultural resources by RMW Paleo Associates (Bissell 1988) on behalf of SMWD in preparation for the construction of the Talega Valley Reclaimed Water Project. The survey resulted in the recording of CA-ORA-1121. When the Ranch Plan development for Rancho Mission Viejo was initiated in 2000, the old surveys were out of date, so a new field walkover survey of the area was carried out (Demcak 2000) resulting in the recording of additional sites including CA-ORA-1565.

The following are descriptions of the two historic properties and summaries of the field investigations that have taken place at each:

CA-ORA-1121 was recorded by RMW Paleo Associates (Bissell 1988) as a midden deposit encompassing 5600 square meters. The urveyors noted that the midden might be in excess of one meter in depth. They observed debitage, flake and core tools, metate fragments, and manos. ARMC personnel tested the site (Demcak and Del Chario 1989) and deemed it to be significant. An ARMC crew subsequently carried out a data recovery program at the site within the construction limits of the proposed Talega Valley pipeline (Jones et al. 1995). The ARMC investigators found an intact and well-developed midden soil, a diverse assemblage of ground stone and chipped stone tools, and other evidence of a prehistoric base camp that was occupied into the historic period, as indicated by the presence of pottery and a glass trade bead. Monitoring by ARMC personnel during construction of the Talega Valley Reclaimed Water Pipeline (Julien and Demcak 1993) resulted in the recovery of a very late Sonoran-style arrowpoint, flake and core tools. The monitor also mapped a hearth feature from which were recovered utilized flakes, two choppers, a biface tip, core scraper, perforator, spokeshave, flake scraper, and a modified flake. On a subsequent field check ARMC personnel collected a whole pestle at the site. All of the artifacts from the site have been donated to the Cooper Center, Santa Ana. The Talega Valley pipeline construction effectively destroyed the site; it is unlikely that any intact deposit remains at CA-ORA-1121.

CA-ORA-1565 was recorded as a light scatter of ground and chipped stone tools on the east side of Gobernadora Canyon (Demcak 2000). The scatter consisted of three scraper-planes, two manos/fragments, four large metate fragments, a bedrock (boulder) metate or grinding slick, a

hammerstone fragment, core, and ground stone fragment. This extensive scatter occupied an area 280 m SW/NE x 140 m NW/SE at an elevation of from 480' – 500' above mean sea level. It was tentatively identified as a plant processing station. Depth of the deposit was unknown. During the test phase at the site (Demcak 2002), depths reached 20 cm below datum. Thirty-three artifacts were recovered, 30 chipped stone and 3 ground stone (manos, or handstones used for grinding hard seeds). Twenty-eight were surface finds; two came from Test Unit 1, 0-20 cm in depth. The chipped stone artifacts (eg., hammerstones, flakes, core and flake tools) indicated that tool-making and re-shaping were taking place at the site Plano-convex tools indicated that scraping of animals hides and possible wood-working may have taken place there. The extensiveness of the scatter and the range of artifact types led researchers to view the site as significant. In a formal review of the site, the site was determined to be NRHP eligible (State Historic Preservation Office 2004).

1.4 TREATMENT PROGRAM

Mitigation measure 4.11-3 requires that for eligible sites "Phase III data recovery (salvage excavations) shall be conducted for these archeological sites or any other sites within the potential impact area of development that cannot be avoided". CA-ORA-1565 lies within the impact area of PA 3 and cannot be avoided thus this site will be subject to a Phase III data recovery effort discussed further below.

CA-ORA-1121 has previously undergone a data recovery program and was effectively destroyed by pipeline construction. Development of PA 3 will impact the site location. The treatment program for CA-ORA-1121 will be construction monitoring as discussed further below in Section 6.0.

The data recovery strategy at CA-ORA-1565 will be directed toward "…sampling populations of cultural items, cultural features, and ecofacts at an activity locus" (Binford 1964:172), as well as recovering data on the depositional record at the site through geomorphology. At each site, ARMC crew members will utilize field methods that are designed to recover the necessary data to answer the above research questions. The purpose of the data recovery program will be to address research questions which were introduced during the test investigations. Research questions include local and regional chronology, subsistence strategies, settlement patterns, and social networking.

The proposed data recovery programs at CA-ORA-1565 sites will be executed in two phases. Phase I will consist of manual excavation of a series of test units randomly placed within the recorded site area. During Phase II mechanical excavation will be used to identify and fully expose features. At CA-ORA-1565 the 40m^2 proposed sample combined with the results from the previous investigation will result in a total sample of 1.001% of the site area (See Table 1).

Following the data recovery at the site, the artifacts, ecofacts, and features will be analyzed, and comparative studies will be undertaken. A volumn sample from the site will be submitted for paleoethnobotanical analysis, obsidian flakes (if recovered) will be analyzed for hydration data and relative dating, organic samples (eg., shell, bone, or charcoal) will be submitted for radiocarbon dating, and any ground stone artifacts which display a protein residue will be submitted for analysis and identification. Site stratigraphy will be drawn and compared with the strata of neighboring sites which might have experienced similar occupations.

Following the data recovery program at the site, final mitigation will consist of monitoring by a qualified archaeologist during construction.

2.0 RESEARCH DESIGN

2.1 Theoretical Perspective

The eligible site will be investigated from a cultural ecological perspective. Cultural ecology is defined as the "study of entire assemblages of living organisms and their physical milieus, which together constitute integrated systems" (Anderson 1973:179). The ecosystem is the conceptual tool, or framework, thorough which data are interpreted, and cultural ecology consists of studying how combinations of cultural traits behave within the human ecosystem (Thomas 1979). The arrangement and relationship of the system's component parts is the focus of examination, not the parts themselves. Culture is viewed as the intermediary between human populations and their surroundings (Knudson 1979), and as such is not viewed as a separate entity but as part of a system.

Culture is also viewed as an adaptive mechanism. Hudson (1971:57) citing Sanders states that "each environment offers to human occupation a different set of challenges, and therefore a different set of alternative responses may be expected, and that the culture will tend to respond to the challenge by taking the path of greatest efficiency in the utilization of the environment". How environmental pressures may have contributed to changes in settlement patterns, artifact assemblage, plant and animal use, and social structures is basic to the current research.

Binford (1962:465) has emphasized the applicability of the cultural ecological perspective to archaeological research design: "As cultural systems become more complex, they generally span greater ecological ranges and enter into more complex, wide-spread, extrasocietal interaction. The isolation of the content, the structure, and the range of a cultural system, together with its ecological relationships, may be viewed as a research objective."

2.2 Research Goals

According to Binford (1968), the goals of archaeological research are threefold. The first objective is the construction of cultural chronologies, ordering of things in time (Thomas 1979). Chronology building consists of dating, then classifying, in order to organize the archaeological record in such a way as to deal with higher level issues (Thomas 1979). Always open to further refinement, cultural chronologies must be viewed as hypotheses, not as fixed structures.

The second research objective deals with the reconstruction of past lifeways. Past lifeways include all aspects of human existence, including such things as technology, economy, social systems, law and government, art, religion, kinship, and settlement patterns. Chronology building asks when and where questions of the archaeological record; in order to reconstruct past lifeways, the archaeologist must ask what and who (Thomas 1979). Past lifeways deal with a single cultural system at a fixed point in time and space.

Archaeology's ultimate goal is the elucidation of cultural processes (Binford 1968), or, in other words, a "search for regularities that are both timeless and spaceless" (Willey and Phillips1958:2). Processual analyses may be diachronic, in that evolution of systems through time is treated, or they may be synchronic, in that various systems are viewed as they work together at a given point in time.

While the three objectives are arranged hierarchically, and the ability to discern law-like generalities is dependent upon data generated from chronology building and past lifeways, most archaeological investigations proceed on two or perhaps all three levels at once (Thomas 1979). The research goals treated in this report are concerned with constructing and refining local and regional chronologies and with reconstructing past lifeways (subsistence patterns, settlement patterns, and social networking), and ultimately with contributing to an understanding of cultural process.

2.3 Research Questions

A series of research questions was developed to guide the fieldwork at the site. The first set of research questions is directed toward the refinement of the local and regional chronology. The lack of absolute dates available to researchers, when the cultural sequences proposed by Wallace (1955) and Warren (1968) were formulated, has led to problems in recognizing and interpreting the San Dieguito/Milling Stone/Intermediate/Late Prehistoric framework. These sequences can be used as hypotheses open to further refinement and/or alteration.

Basic to all research questions is rigorous temporal control of the data, ideally through chronometric dating. A proper ordering of artifact types, assemblages, sites or cultures in time is the necessary first step in detecting patterning on the intersite and regional levels. Once chronological sequences are delineated, contemporaneity of sites and/or components can be established, thus enabling meaningful comparisons to be made.

The presence of ecofacts, chipped and ground stone artifacts, and midden accumulation at the site will provide an opportunity to address a number of research questions through the field and laboratory investigations. Certain of these research questions focus on chronology. Outlined below are the questions as well as the requisite data to answer them.

2.3.1 Chronology

1. When and for how long was the site occupied?

To answer this question, it is necessary to date the cultural deposit and to gauge the intensity of use. One of the aims of the upcoming investigation, therefore, is to recover datable materials, such as organics (charcoal, shell, and bone) for radiocarbon dating, and obsidian for hydration measurements, in careful stratigraphic context. The recovery of time-sensitive artifacts such as projectile points, beads (shell and red argillite), ceramics, discoidals, and patinated volcanic tools, used to assign relative dates, are also a goal. Depth of the cultural deposit can serve as a rough estimate of the length of occupation at the site when coupled with the dated items.

2. Did occupation occur continuously or was the site occupied successively?

Cultural hiatuses, or sterile levels, would imply a discontinuous occupation. Careful stratigraphic recording will be sought to recognize occupational strata.

3. How does the project site relate to other sites within the same time frame? Can the site provide data to refine the regional syntheses?

A comparison of relative frequencies of artifact types, ecofacts, and site types within the same time frame will add to an understanding of settlement and subsistence patterns as well as to the local and regional cultural/historical framework. Providing absolute dating for specific time markers, such as discoidals or red argillite beads, will help to clarify their chronological placement.

4. What is the cultural affiliation of the site/component? Does the site contain evidence of pre-Shoshonean or post-European contact?

Several of the sites in the vicinity of CA-ORA-1565 contain flaked tool assemblages that may be related to an Early Holocene cultural pattern, the San Dieguito Tradition. Thus there is considerable potential for the discovery of a pre-Shoshonean occupation in this area. The project site is located proximate to the ethnographically known coastal-inland trail called El Potrero de los Pinos/San Juan Hot Springs Trail (present-day Ortega Highway, or SR 74) and thus might contain data relevant to an hypothesized inland to coastal migration of Shoshonean peoples in the late period. The project site is also located in proximity to Mission San Juan Capistrano and to the Portola Expedition route in Cristianitos Canyon and in Gobernadora Canyon. The possibility of encountering Mission period occupational levels is recognized for the project area.

3.3.2 Subsistence Strategies

The second set of research questions deals with the reconstruction of subsistence strategies, a past lifeway. In other words, how did the occupants of the site make their living? The recovery of ecofactual material as well as the tools used in food procurement and processing will be helpful to address questions of subsistence, such as:

1. What were the food resources utilized by the site occupants? Was there a change over time?

The range and types of ecofacts (shellfish remains, vertebrate faunal bone) present at the site can be quantified and their relative numbers compared through the occupation levels. The environments of exploitation, or site catchment, can be determined from analyses of the recovered species, and non-local resources can be isolated (exchange?). Analyses of tool types and their surface residues, especially plant processing equipment, and their evolution over the span of occupation at the sites can aid in reconstructing past subsistence practices.

2. In which season were the ecofacts procured?

Seasonality studies on shellfish, such as *Chione* sp. and vertebrate fauna, such as mule deer, may shed light on the placement of the site within the seasonal round of subsistence and settlement hypothesized by Hudson (1971) for the aboriginal populations in this region.

3. What tool technology is represented by the artifacts? What raw materials were utilized in tool manufacture? Were they locally derived?

Analyses of technology of manufactured items will aid in placing the site and its occupants within the local cultural and historical framework and permit the recognition of novelty, or innovation, in tool production within a regional pattern. Raw material analyses enable researchers to determine preferences for

particular raw materials; these data in turn lead to questions regarding sourcing of raw materials, such as geological or physical environment of origin, direct procurement versus exchange for non-local materials, crafts production, etc. The presence or absence of patination (accumulation of cortex) may be used to determine relative age of the artifacts as it represents elapsed time since the tool was created or modified. Patination on volcanic tools may reflect a San Dieguito occupation.

4. What are the range and types of artifacts represented? Is there a change over the span of occupation, e.g., a trend toward increasing specialization in tool types?

Artifact classes and types can be analyzed for the various levels of the site and their relative frequencies compared. The presence of specialized tools, such as fishhooks, shaft straighteners, arrowpoints, drills, and awls in the upper site levels would be indicative of this trend.

5. Is there variability in the horizontal or vertical distribution of artifact/ecofacts which would indicate internal site patterning such as activity areas?

Analysis of the spatial positioning of individual species of fauna or possibly flora may permit researchers to hypothesize that particular site areas, either vertically or horizontally delineated, were utilized for specific activities, by specific work groups, or were utilized alternately over the span of occupation of the site. Similarly the spatial dimensions of the artifact assemblage would inform on specific use areas.

2.3.3 Settlement Patterns

A third set of research questions is directed toward the reconstruction of another past lifeway, settlement patterning. Data recovered from a group of sites rather than from a single site is more amenable to answering questions of a regional nature such as this. These questions are concerned with the definition of site types and the illustration of their relationship to the landscape and to each other, such as:

1. Which site types are represented within the project area? Are they villages/rancherias, base camps, or special activity areas, such as quarries, lithic workshops, or plant processing stations?

A recognition of site types can be accomplished by reference to frequencies and types of artifacts present, frequencies of ecofacts relative to artifacts, accumulation of midden, nature of midden deposit (depth; shell, charcoal, fire-affected rocks; features present?), size of artifact/ecofact scatter, presence of internal patterning reflective of village/rancheria, or specialized assemblage reflective of hunting camp or plant processing station.

2. What is the spatial relationship of this site to other sites in the vicinity and to the environment? What were the determinants of site location? Was it the general topography, or access to water, plant, animal or mineral resources that made the site location desirable? Did access to lithic raw materials, trails or trade routes enter into the site location consideration? Does site function relate to these determinants?

Analysis of the spatial patterning of this site in relation to nearby sites can aid in the prediction of locations of additional sites in the project vicinity. Environmental determinants of site location or site type in the area can be hypothesized and tested in future research.

3. During what periods of the year was the site occupied and/or utilized?

Seasonality studies on fauna or flora may help to pinpoint the season of occupation or utilization, or specific tool types may be indicative of seasonally available resources, such as acorns.

4. Can a change in settlement patterns over time be detected in the occupational sequence?

Control of chronology through stratigraphic recording and/or dating of ecofacts or obsidian over the span of occupation is critical to an interpretation of change in settlement. Environmental factors (flooding, drought, erosion) may contribute to an explanation of a change in settlement.

2.3.4 Social Networking

The fourth set of research questions deals with social networking. The interaction of various groups of Native Americans in prehistory can be detected in the archaeological record by the presence of non-local, or exotic, goods which moved from group to group through exchange networks (Earle and Ericson 1977; Earle 1982). Examples of an exchanged good in prehistoric southern California are obsidian; fused shale; steatite; asphaltum; marine shells, usually in bead form (Davis 1961); and occasionally pottery. Motivation for such exchange may be sought in the resource base (site catchment) available to site occupants. The proximity of the project area to El Potrero de los Pinos/San Juan Hot Springs Trail and to the Portolá route (El Camino Real) makes exchange issues highly relevant. The following research questions apply to social networking/exchange:

1. What constitutes the local resource base (catchment) in terms of lithic and other inorganic raw materials, invertebrate and vertebrate fauna, and flora? Are any critical resources (water, salt, lithics, medicines, construction materials, plants and animal foods) missing or periodically in short supply?

An analysis of the local environment and its organic and inorganic components will define the effective environment for site occupants. Missing critical resources can be noted and their possible means of procurement suggested.

2. Are non-local resources (obsidian, steatite, shells) or imported items (beads, pottery) present at the site? If so, in what form are the exotic materials or items found? Are they finished or partially finished artifacts? Are they present as unmodified raw material? What are the sources of the non-local materials or items? How are the exotic materials or items obtained? Is it through trade or by direct procurement?

Analyses of raw materials of artifacts and ecofacts will allow researchers to determine local versus non-local resources. Sourcing studies of obsidian are easily done and can reveal the geological origin of those lithics; other lithic raw materials (fused shale, various cherts) are not yet amenable to such sourcing. Pottery clays can sometimes be sourced. The morphology of the exchanged item (modified or unmodified) may indicate whether it was imported in manufactured form or as raw material. Distance (physical and social) from the source can be analyzed and may provide insights into the method of procurement.

3. Is there a change over time in the amounts and types of exotic materials present? Are non-local materials preferred over local materials for particular artifacts?

Analyses of site components, or occupation levels, may reveal a change in exotic frequencies over time. Analyses of individual artifact types and their raw materials will permit researchers to isolate examples of preferred materials where local alternatives are available. Motivation for such exchange may be rooted in a need for the perpetuation of social networking even where non-essential items are imported.

4. Are the site contents in any way reflective of a trade corridor location or do they reflect some control over resources? How do the amounts of non-local materials present at the project sites compare to others in the area (relative frequency; exclusivity)?

A comparative study of the project site and other excavated sites in the area or in the region may allow researchers to detect patterns (group to group; trail utilization) in the exchange relations among the local populations in prehistory.

3.0 FIELD METHODS

The data recovery strategy at the site will be directed toward "…sampling populations of cultural items, cultural features, and ecofacts at an activity locus" (Binford 1964:172), as well as recovering data on the depositional record at the site through geomorphology. At CA-ORA-1565 ARMC crew members will utilize field methods that are designed to recover the necessary data to answer the above research questions.

The data recovery will be carried out in two phases: Phase I, manual excavation of test units; Phase II, mechanical excavation to expose and expand features.

3.1 PHASE I: MANUAL EXCAVATION

For the Phase I manual excavation a form of probability sampling within a sampling frame, made up of accessible units of the site, will be utilized. A stratified random sample will be drawn. Strata will consist of spatial units of equal size (Hill 1990). Sampling strata will consist of 10 x 10 meter units (100 $m^{2)}$. Sample units, one-meter squares, will be selected from these larger sampling strata for manual excavation; the number of sample units (m^2) to be excavated by individual site is shown in Table 1. Units will be excavated by contour levels in arbitrary 10-cm intervals. For units that display a well-developed midden soil, or anthrosol, random samples of a half-gallon volume will be collected and provenienced to provide samples for paleoethnobotanical analysis and for use in radiocarbon dating in the absence of charcoal or other organics.

The sample size for this data recovery program has been calculated using the data from the previous investigations at the site and a projected desirable total of 1% minimum to ensure a representative sample of the site's artifacts, features, and ecofacts. When subsurface sampling by test pits does not produce artifacts or produces a minimal recovery, as is predicted for CA-ORA-1565, mechanical excavation may be substituted for 50% or more of the desired sample. Exposed features will be further explored by a mechanical and manual excavation, as needed. See Table 1 below for a summary of the previous sampling at the project site, the desired sample size, and the units needed (m^2) to achieve that sample size during the proposed data recovery program.

Table 1. Previous and Proposed Sample from CA-ORA-1565.

SITE NO.	AREA	PREVIOUS SAMPLE	PROPOSED SAMPLE	TOTAL SAMPLE
1565	39,320m^2	2.0m^2 (0.0001%)	392m^2 (1.0%)	392m^2 (1.0001%)

3.2 MECHANICAL EXCAVATION

Phase II will consist of mechanical excavation with a backhoe. The backhoe will be used to locate and expose features and to further expose features recorded during manual excavation. These mass exposures of the site seem appropriate to overcome the inherent difficulties in discovering and fully exposing features with the small samples commonly used in test phases and data recovery programs (Shott 1987). The backhoe cuts will also expose site stratigraphy and allow for geomorphological

comparisons with the data from the previous testing at the site. The mechanical excavation will be carried out by Robert S. White of Archaeological Associates who has performed extensive mechanized excavation in southern California (Van Horn et al. 1986).

3.3 Once features have been partially exposed by either manual or mechanical excavation, ARMC crew persons will manually excavate and fully expose the features, prepare plan drawings, record depths of recovery, and photograph items in situ before they are removed. Backhoes may be used alone to expose especially large or extensive features, such as clusters of large rocks (boulders). Crew persons will follow up with mapping and photography.

3.4 GEOMORPHOLOGY

Using the backhoe cuts, a stratigrapher will map the exposed strata and prepare a section drawing and report. The report will present a record of site deposition which can be correlated with occupational sequences at the project site, with nearby sites, or with specific site events, such as abandonment (cultural hiatus) or burials.

3.5 TREATMENT OF HUMAN REMAINS

In compliance with Chapter 1.7 – 1.7.5 of the Public Resource Code (PRC) of the State of California, ARMC will notify the Orange County Coroner of any uncovered human remains or suspected human remains. The Coroner will in turn notify the Native American Heritage Commission (NAHC) when the remains are found to be Native American. The NAHC will contact the Most Likely Descendents (MLD's) of the deceased who will confer with the archaeological staff and Rancho Mission Viejo as to disposal of the remains. ARMC staff will assist in any reburial activities that are decided upon and prepare a report of such reburial. If the remains are placed off site, a site survey record of the reburial location will be prepared by ARMC staff and a copy of the record will be sent to the NAHC and to the South Central Coastal Information Center (SCCIC).

4.0 LABORATORY METHODS

4.1 ARTIFACT ANALYSIS

4.1.1 Formal Analysis

Lithic artifacts will dominate the assemblages from the project site. A few shell, bone, or ceramic artifacts may also be recovered. ARMC crew persons will wash, dry, and sort all of the artifacts on the basis of morphology, or form, resulting in their being cataloged as flakes, cores, hammerstones, plano-convex tools, perforators, manos, metates, beads, pendants, fishhooks, etc.

4.1.2 Functional Analysis

Once sorted into tool categories the tools will be analyzed as to use wear or inferred function. Artifacts will be examined with a 10x magnifier to detect use wear. Use wear angles will be measured in degrees using a simple template. Flakes will be checked for presence/absence of cortex (rind) to determine reduction stage (primary, secondary, or tertiary) and measured using a template (= or <.25, 0.5, 1.0, 2.0, 3.0, 4.0, or 5.0").

4.1.3 Stylistic Analysis

Diagnostic artifacts will be analyzed on the basis of style: shape (oval, triangular, round), base treatment (concave, straight, convex), percussion or pressure flaking, cut or ground, perforation type (conical, biconical), incised or unincised, and decorated or undecorated are attributes that may relate to a specific occupation, such as Cottonwood Triangular arrowpoints and a Late Prehistoric Horizon occupation.

4.2 FAUNAL ANALYSIS

4.2.1 Speciation

Once the pieces of bone are separated and shellfish are washed and set aside, these fauna are speciated, i.e., sorted by genus and by species (when possible). A qualified faunal analyst will speciate the vertebrates; ARMC lab personnel will speciate the invertebrates. Mark Roeder will speciate any recovered fish. Speciation enables lab personnel to determine the origin of the animals (bay, open coast, deep ocean; grassland, chaparral, creekside), to hypothesize the method of procurement (direct or indirect), and to propose a subsistence and settlement pattern involving the animals (village base, collecting forays; short-term scattered special-purpose camps).

4.2.2 Minimum Number of Individuals (MNI)

Once the animals are speciated, they will be counted as to Minimum Number of Individuals (MNI) per genus or species per unit and 10-cm level. Using MNI a researcher can calculate the volume of fauna captured and thus amount of edible meat. By comparing MNI of various species, one can analyze the food

preferences of local prehistoric people, or estimate the relative population numbers of particular resources (eg., clams vs. mussels) in the resource area utilized by site occupants.

4.2.3 Seasonality Studies

Determining the likely period of capture or the season of availability of species can aid in the reconstruction of subsistence strategies by prehistoric populations in the study area. By comparing the seasonality of various species present at a site or sites, one can map out a seasonal round that the group would travel, if foraging, or areas to be traveled by small hunting or gathering parties in pursuit of seasonal resources not within easy walking distance of the base camp.

4.3 SPECIALIST STUDIES

4.3.1 Protein Residue Analysis

Prior to washing of the surfaces of manos, metates, mortars, pestles, and chipped stone tools, such as projectile points, the lab crew will examine them for residues from plants and animals that might be amenable to identification by crossover-immunoelectrophoresis (CIEP). Such samples will be sent to Dr. Robert M. Yohe II, Director, Laboratory of Archaeological Sciences, California State University, Bakersfield.

4.3.2 Paleoethnobotanical Analysis

In the event that floral samples are recovered from any of the matrix samples (bulk or other), a paleoethnobotanical analysis will be carried out by Dr. Virgina Popper of the UCLA Laboratory of Paleoethnobotany.

4.3.3 Obsidian Sourcing Analysis

Samples of obsidian will be sourced by Dr. Richard Hughes, Geochemical Research Laboratory. Once sourced, the samples will be analyzed for hydration band measurements. See Relative Dating below.

5.0 DATING THE CULTURAL DEPOSITS

5.1 RELATIVE DATING

The collection of various diagnostic artifacts (eg., projectile points, discoidals, potsherds, trade beads, etc.) will provide relative dating for the site. The presence of patinated volcanic tools may indicate a San

Dieguito Tradition occupation. The presence of historic artifacts may be related to the Portolà Expedition (El Camino Real) or early Mission developments.

The hydration band measurements on obsidian may also provide relative dates in that greater or lesser rind measurements are indicative of greater or lesser passage of time since the piece of obsidian was removed from a core or modified by a flintknapper. After source analysis by Dr. Richard Hughes, specimens will be sent to Origer's Obsidian Laboratory for hydration band measurements.

5.2 RADIOCARBON DATING

The collection of charcoal, large amounts of shell or animal bone, or very large amounts of midden soil may provide the organics for radiocarbon dating. Chronometric dating would be very helpful in the San Juan Creek and adjacent canyons where few absolute dates are presently available and where the relationships between sites are still not well understood. Samples will be processed by Beta Analytic.

6.0 CONSTRUCTION MONITORING

6.1 COVERAGE

Construction monitoring by qualified persons will be carried out in the vicinity of the project site and any newly discovered sites. Specifically in the case of CA-ORA-1565, following completion of the data recovery program described above, a qualified archeological monitor will be onsite during construction activities. Similarly for CA-ORA-1121, although the site has previously undergone a data recovery program and the site was effectively destroyed by the pipeline construction, development of PA 3 will impact the site location thus a qualified archeological monitor will be onsite during construction activities.

6.2 DISCOVERY TREATMENT PLAN

In the event of newly discovered sites, they will be deemed to be NRHP eligible and data recovery will be carried out immediately. The sampling strategy and sample size of the CRMP investigations will apply equally to the new sites. Human remains will be treated as outlined in 3.6 above.

6.3 NATIVE AMERICAN MONITORS

For those sites where human remains are found, members of the Native American community will be notified when construction will be carried on in the vicinity of those sites and will be encouraged to provide monitoring during rough grading.

7.0 CURATION

7.1 CURATION FACILITY

Curation will be carried out under the guidelines of the County of Orange. The artifacts and ecofacts will be offered to the County who have the right of first refusal. Once accepted the items will be donated to the Cooper Center, Santa Ana, where they will be curated.

7.2 PREPARATION OF SPECIMENS

The recovered artifacts and ecofacts from the CRMP data recovery program will be prepared to the specifications of the County of Orange.

7.3 CURATION COSTS

All curation costs, including supplies, labor for preparation of specimens, transportation, and permanent curation fees will be borne by Rancho Mission Viejo, LLC, and RMV Entitlement Company, P. O. Box 9, San Juan Capistrano, CA 92693.

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County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX D

PHASE 1 ENVIRONMENTAL SITE ASSESSMENTS

PLANNING AND ZONING CLEARANCE

THESE PLANS AND DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN COMPLIANCE WITH THE APPLICABLE LAND USE REGULATIONS. ISSUANCE OF A PERMIT IS RECOMMENDED SUBJECT TO APPROVAL BY OTHER DEPARTMENTS AND ANY NOTED CONDITIONS. THIS APPROVAL DOES NOT RELIEVE THE ENGINEER OF RECORD OF THEIR RESPONSIBILITY TO PREPARE THE PLANS, SPECIFICATIONS, MAPS, AND OTHER RECORD DOCUMENTS PER CURRENT CODES AND APPLICABLE STANDARDS OF PRACTICE.

ATKINS NORTH AMERICA, INC.

February 11, 2015

Signature: PA140072

Date:

County of Orange - OC Public Works
OC Development Services
CONDITIONALLY APPROVED

EEI
Geotechnical & Environmental Solutions

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

PHASE I ENVIRONMENTAL SITE ASSESSMENT

RANCHO MISSION VIEJO
Ranch Plan – Planning Area 3
Northeast of Ortega Highway and Gobernadora Canyon
San Juan Capistrano, Orange County, California 92675

January 8, 2015
(Date revised February 6, 2015)

Prepared by: EEI
EEI Project Number RMV-72029.1

2195 Faraday Avenue ♦Suite K♦Carlsbad, California 92008-7207♦ Ph: 760-431-3747♦Fax: 760-431-3748♦www.eeitiger.com

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Prepared for:

Jeff Brinton, Esq.
Paskerian, Block, Martindale & Brinton, LLP
85 Enterprise, Suite 470
Aliso Viejo, California 92656

Site location:

Rancho Mission Viejo
Ranch Plan - Planning Area 3
Northeast of Ortega Highway and Gobernadora Canyon
San Juan Capistrano, California 92675

Prepared and Edited by:

DRAFT
Polly Ivers
Project Scientist

Reviewed by:

DRAFT
Bernard A. Sentianin
Principal Geologist

EEI
2195 Faraday Avenue, Suite K
Carlsbad, California 92008-7207
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EEI Project Number RMV-72029.1

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County of Orange - OC Public Works
OC Development Services
CONDITIONALLY APPROVED
Approved By: Planning Commission
Approval Date: 2/25/2015
Permits: PA140072 (PA3 & PA4 Addendum)

APPENDICES:

Appendix A – Resume of Environmental Professional
Appendix B – Draft Master Area Plan PA3 and PA4 Exhibits and Tables/Boundary Map/FIRM/ Preliminary Title Report
Appendix C – Historical Aerial Photographs/Topographic Maps/City Directory Report/ Sanborn Maps
Appendix D – Environmental Records Search
Appendix E – OCFA Inspection Reports
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GENERAL SITE INFORMATION

Project Information: Rancho Mission Viejo - Planning Area 3

EEI Project Number: RMV-72029.1

Site Information:
Northeast of Ortega Highway and Gobernadora Canyon
San Juan Capistrano, Orange County, California 92675

Site Access Contact: Sam Couch, 949-240-3363

Consultant Information:
EEI
2195 Faraday Ave., Suite K
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Fax: 760.431.3748
E-mail Address: bsentianin@eeitiger.com

Inspection Date: November 5, 2014; **Report Date:** January 8, 2015 (Date revised February 6, 2015)

Client Information:
Jeff Brinton, Esq.
Paskerian, Block, Martindale & Brinton, LLP
85 Enterprise, Suite 470
Aliso Viejo, California 92656

Site Assessor:
Bernard A. Sentianin – Principal Geologist

EP Certification:
I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR 312.10 (**Resume, Appendix A**).

DRAFT

_____
Bernard A. Sentianin – Principal Geologist

AAI Certification:
We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

DRAFT

_____
Bernard A. Sentianin – Principal Geologist

EXECUTIVE SUMMARY

At the request and authorization of the Client (Rancho Mission Viejo), EEI conducted a Phase I Environmental Site Assessment (ESA) for the subject property identified as the Planning Area Three (PA3) portion of Rancho Mission Viejo (RMV) Ranch Plan Planned Community, located approximately three miles east of the City of San Juan Capistrano, in unincorporated Orange County, California. The purpose of this Phase I ESA was to assess the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment (i.e., *recognized environmental condition* as delineated in ASTM E1527- 13). A *de minimis* condition is not considered a *recognized environmental condition*.

The subject property is located north of Ortega Highway and San Juan Creek, west of Caspers Regional Park, east of Chiquita Canyon and the Gobernadora Ecological Restoration Area (GERA), and south of the Coto de Caza residential development. PA3 encompasses approximately 2,300 acres and is a portion of each of the following lots, identified by assessor's parcel numbers (APNs) 125-161-03, -04, -30, -41, -91, and -93. According to the County of Orange Planning Department, the subject property is located within the Ranch Plan Planned Community Zoning District (PC.

The majority of the subject property (the northern portion) is undeveloped and covered by thick vegetation. The remainder of the property (the southern portion) is currently occupied by various commercial, industrial, and agricultural businesses, and a few residences, including the following:

- Color Spot Nursery (31101 Ortega Highway) encompasses approximately 245 acres and is located in the south-central portion of the subject property. The site is a commercial nursery with a maintenance shop, storage buildings, greenhouses, lined ponds, an irrigation recovery system, and a water filtration/blending station.

- Campo Vaquero aka Cow Camp (31471 Ortega Highway) encompasses approximately fifty acres and is located in the southwestern portion of the subject property. The site includes pasture fields, a maintenance facility, and horse corrals.

- Greenstone Materials and Redi-Mix Concrete (31507 Ortega Highway) encompasses approximately five-acres and is located in the southeastern portion of the subject property. The site is used as a concrete and asphalt recycling operation and a Redi-Mix concrete facility

- Catalina Pacific Concrete (CPC) North (31511 Ortega Highway) encompasses approximately 16 acres and is located in the southeastern portion of the subject property. The site, the former main CalMat yard facility, is occupied by a concrete batch plant which includes a truck fueling facility, a truck washout area, office building, scale house, maintenance shop, storage buildings, several storage units, and a few sub-tenants, including Sierra Soils, a topsoil and composting producer.

- Olsen Pavingstone (31511 Ortega Highway) encompasses approximately six acres and is located in the southeastern portion of the subject property. The site is occupied by a paving stone manufacturing plant which includes several office trailers, a residential unit, the manufacturing plant, and several storage units.

- Cemex (formerly City Concrete, 31601 Ortega Highway) encompasses approximately four acres and is located in the southeastern portion of the subject property. The site is occupied by a concrete batch plant which includes an office trailer, maintenance trailer, fueling island, truck washout area, and storage shed.

- CR&R/Solag Disposal Company (31641 Ortega Highway) encompasses approximately six acres and is located in the southeastern portion of the subject property. The site is occupied by a waste management facility which includes an office building, maintenance shop, fueling station, waste processing unit, and storage units.

- O'Connell Landscaping (31821 Ortega Highway) encompasses approximately one-half acre and is located in the eastern portion of the subject property. The site is used as a storage yard which includes several portable storage units.

- Ewles Materials (32501 Ortega Highway) encompasses approximately two and a half acres and is located in the southeastern portion of the subject property. The site is occupied by a ~~recycling and processing plant, concrete and rock crushing facility~~ which includes an office trailer, employee trailer, storage unit, a fuel compound, and a wash station.

- A field and lemon groves north of Ewles Materials.

- Several residences (31121, 31151, 31181, 31221, 31241, 31261, 31263, 31265, 31381, and 31825 Ortega Highway) are located along the ridge north of Campo Vaquero, in the southwestern portion of Campo Vaquero along San Juan Creek, and adjacent to the O'Connell Landscaping storage yard.

EEI has previously completed Phase I Environmental Site Assessments for each of these sites, with the exception of Campo Vaquero (Cow Camp), the lemon groves and field, the residential units, and the northern portion (undeveloped property). A brief summary of each ESA is included below in section 3.8 Previous Assessments.

Based on historical records such as aerial photographs, and topographic maps, the subject property was undeveloped land from at least 1938. In 1946 and 1953, small structures and ranching operations appeared on the southern portion of the property. By the 1960's, residential dwellings (in their present configuration) were present along the ridge overlooking the current site of Cow Camp, and several barns were noted on the southern portion of the property. The canyons along the western margin were noted as cleared and possibly cultivated, as was the adjacent property to the west. From the 1960's to the mid-1990's, a sand and gravel mining operation (current site of Cemex and CPC facility), and an asphalt/cement batch plant (current site of CR&R/Solag Disposal Company) were in operation on the southeast portion of the subject property. By the 1970's, a nursery was also present on the southeast portion of the property. In a 1989 aerial photograph, a small area of land in the northern portion appeared with a few small structures, and the western canyons were cleared and cultivated. From 1989 through the present time, the property has remained in its current configuration with the exception of changes to the property tenants.

A County permit and directory search indicated a ranch, residential dwellings, American Cement, and Conrock Co. (predecessor of CalMat) occupied portions of the subject property from at least 1972. During the 1990's, Olsen Pavingstone, CPC, and City Concrete occupied the property at 31511 and 31641 Ortega Highway, respectively. By 2003, Cemex, CR&R and Solag Disposal Company occupied the property at 31641 Ortega Highway.

EEI contacted the Orange County Fire Authority and Health Care Agency (OCFA and OCHCA), California Department of Toxic Substances Control (DTSC), State Water Resources Control Board (SWRCB), and reviewed other State and Federal databases to determine if the subject property, or any adjacent properties, were listed as hazardous waste generators, underground storage tank releases (UST), or as having other environmental concerns (i.e., spill, leak, or above-ground tank).

A state and federal database search indicated an occupant of the subject property, **Catalina Pacific Concrete** (31511 Ortega Highway); was listed under the following databases: RCRA Hazardous Waste Generator (SQG); Registered Underground Storage Tank (UST and HIST UST); Above-ground Storage Tank (AST); Facility Inventory Database (CA FID UST); Statewide Environmental Evaluation and Planning System (SWEEPS); National Pollutant Discharge Elimination System (NPDES); DTSC's Site Cleanup (CORTESE); DTSC Hazardous Waste Manifests (HAZNET); Toxic and Criteria Pollutant Emissions (EMI); and Waste Discharge System (WDS).

Other state and federal database listings for occupants of the subject property included the following. **Cow Camp** aka **Rancho Mission Viejo** (31471/74 Ortega Highway), was reported under the RCRA SQG, CA FID UST, CORTESE, and HAZNET databases. **Solag Disposal** (31641 Ortega Highway) was reported under the landfill and/or solid waste disposal site database, NPDES, and HAZNET databases. ~~**Olsen Pavingstone, Inc.** aka~~ **Calmat** (former) (31511 Ortega Highway) was reported under the leaking underground storage tank database (LUST), NPDES, HAZNET, EMI, and WDS databases. **CR&R, Inc.** (31641 Ortega Highway) was listed under the UST database, HAZNET, and Landfill databases. **Greenstone Materials, Inc.** (31507 Ortega Highway); was listed under the US Mines database as the former site of the Lucas Canyon Quarry, and the NPDES database. **Ewles Materials** (32501 Ortega Highway); was listed under the NPDES, EMI, and WDS database. **Cemex** (31601 Ortega Highway) was listed under the NPDES, and HAZNET database.

An OCHCA records review indicated **Cow Camp** aka **Campo Vaquero** (31471 Ortega Highway) was formerly permitted to operate two underground storage tanks (UST): one 10,000-gallon diesel UST and one 500-gallon waste oil UST, both installed in 1988. Two additional occupants of the subject were listed as permitted UST sites and included: **Catalina Pacific Concrete** (31511 Ortega Highway); and **CR&R** (31641 Ortega Highway).

EEI contacted the Orange County Fire Authorities (OCFA) Community Right to Know Records Office for information regarding hazardous materials inventory, Business Emergency Plan, or Code Enforcement or Inspections at the subject property. The OCFA provided EEI with inspection reports on file dating from December 2012 to May 2014 for several onsite facilities. The sites under routine inspection by OCFA in include **Catalina Pacific Concrete** (31511 Ortega Highway), **Cemex/City Concrete** (31511 Ortega Highway), **Color Spot Nursery** (31101 Ortega Highway), **Olsen Pavingstone, Inc.** (31511 Ortega Highway), **Greenstone Materials** (31507 Ortega Highway), **Ewles Materials** (32501 Ortega Highway), **CR&R/Solag Disposal** (31641 Ortega Highway), and **Cow Camp** (31471 Ortega Highway). A detailed description of the inspections reports is provided in Section 3.4.1 OCFA.

In February and March 2014, EEI performed a limited agricultural chemical survey to evaluate soil beneath the agricultural portions (i.e. orchards) of PA3. Sampling activities were conducted as three separate events with the initial event generating 35 samples, the second event 44 samples, and the final event 34 samples. A total of 57 discrete soil samples (PA3-1 through PA3-57), were collected at 6-inches below ground surface (bgs), and were analyzed for Organochlorine Pesticides by EPA Test Method 8081A and for total arsenic and total lead by EPA Method 6020.

The results of the agricultural chemical testing detected concentrations of Dieldrin in 2 samples, DDT in 11 samples, DDE in 12 samples, total lead in 48 samples, and total arsenic in 53 samples. The maximum reported concentrations were: Dieldrin, 12 micrograms per kilogram (µg/kg) in sample P3-47-0.5; DDT, 58 µg/kg in sample P3-37-0.5; DDE ,170 µg/kg in sample P3-37-0.5; Total lead, 85 milligrams per kilogram (mg/kg) in sample P3-14-0.5; and Total arsenic, 12 mg/kg in sample P3-49-0.5. No other samples analyzed detected any other organochlorine pesticides (included in EPA Test Method 8081A) above the laboratory reporting limit (i.e., “non-detect”).

EEI compared the reported analyte concentrations to the Office of Environmental Health Hazard Assessment soil screening numbers, residential scenario (OEHHA, 2010), and to a 2008 DTSC study of southern California school sites determining a background arsenic concentration of 12 mg/kg (DTSC 2008). Of the five reported analytes, only lead occurred at values exceeding the OEHHA screening value. Arsenic is unique by the fact that ambient concentrations typically exceed the OEHHA value of 0.07 mg/kg by a factor of 100 or more (DTSC, 2008). To augment the impractical value, a 2008 study by DTSC was referenced which examined proposed school sites in southern California. DTSC determined that the ambient concentration of arsenic was 12 mg/kg and accordingly this value was referenced by EEI for comparison purposes. Below is a listing of the maximum detected concentration relative to its respective OEHHA or DTSC value:

The Dieldrin at a reported maximum concentration of 12 ug/kg was less than the OEHHA residential screening value of 35 ug/kg. The DDT at a reported maximum concentration of 58 µg/kg was less than the OEHHA value of 1600 ug/kg. The DDE at a reported maximum concentration of 170 µg/kg was less than the OEHHA value of 1600 ug/kg. The maximum total lead concentration of 85 mg/kg, detected in soil sample P3-14-0.5, marginally exceeds the OEHHA screening level of 80 mg/kg. The maximum total arsenic concentration of 12 mg/kg, detected in soil sample P3-49-0.5, matched the background concentration of 12 mg/kg established by DTSC indicating that none of the analyzed samples exceeded acceptable background conditions for sites occupied by children in the study region. Based on these results, no additional investigation appears to be necessary at this time.

In March 2014 and May 2014, EEI conducted a series of soil vapor surveys conducted on existing and former UST locations in ~~Planning Area 3~~PA3, in an effort to identify potential subsurface vapor contamination that may impact future site development in the areas identified. The specific sites investigated included former UST locations at Cow Camp (including Campo Vaquero and Shop) and Color Spot Nursery, as well as existing UST locations at Catalina Pacific Concrete (CPC) and CR&R/Solag. Based on the results of the soil vapor survey, three samples from the cow camp shop area and one sample from the Campo Vaquero former UST location contained ethylbenzene at concentrations exceeding the OEHHA residential screening value of 420 µg/m^3 and a single sample from the shop area contained xylenes at concentrations exceeding the OEHHA residential screening value of 320,000 µg/m3. None of the samples collected from CR&R/Solag, CPC, or Color Spot Nursery UST locations exceeded their respective screening levels.

In July 2014, EEI conducted a geophysical survey to map the suspected burial area in the eastern portion of the Cow Camp storage yard, followed by soil matrix and soil vapor sampling in August 2014 to assess the extent of potential subsurface impacts of petroleum hydrocarbons and/or chemicals of concern. Based on the results of the investigation, geophysical anomalies indicating the presence of buried metallic and non-metallic debris was noted in several locations within the suspected burial site. The maximum depth of burial ranged from 10 to 15 feet bgs. TPH of the diesel and motor oil ranges exceeded their respective ESL values in one sample (GP-1) collected from the area labeled as anomaly 1. In addition, soil vapor concentrations of xylenes exceeded the Office of Environmental Health Hazard Assessment (OEHHA) threshold for residential exposure in three areas sampled. The widespread distribution suggested that the limits of the vapor plume could exceed the specific areas identified.

On November 5, 2014, EEI personnel conducted a site reconnaissance to physically observe the site and adjoining properties for conditions indicating a potential environmental concern. Concerns would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage and/or handling. No evidence of environmental concerns was noted on the subject property during our site reconnaissance.

EEI performed a Vapor Encroachment Screen (VES) for the subject property, in accordance with ASTM E2600-10. The purpose was to evaluate whether sites (e.g., gas stations, dry cleaners, or other listings of environmental concern) that store or dispose of potential chemicals of concern or have documented releases, may migrate as vapors onto the property, as a result of contaminated soil and/or groundwater which may be present on or near the property (i.e., a potential Vapor Encroachment Condition or pVEC). Based on the results of a Tier 1 evaluation, EEI concluded that a pVEC for the subject property cannot be ruled out, due to the presence of existing or former fuel UST's at the Cow Camp shop, Campo Vaquero UST site, CPC, Color Spot Nursery, and CR&R Solag. EEI recommended invasive testing at those locations, which was performed in March and May 2014 and summarized in section 3.8.12.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the property identified as RMV PA3 (2,300-acres), the *subject property*. Any exceptions to, or deletions from, this practice are described in Section 8.0 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *subject property*, except for the following:

- According to the information reviewed, one 500-gallon UST was removed in the mid to late 1980's from the Campo Vaquero corrals area. No information was available with the Orange County Health Care Agency regarding the tank removal, or any soil sampling performed. In addition, the area east of the Cow Camp maintenance shop area (used to store equipment) was historically used to bury old equipment and waste scraps. In March 2014, EEI conducted soil vapor testing which indicated the presence of ethylbenzene in this area that exceeded residential screening levels. Further investigation may be warranted in prior to development to assess possible soil contamination.

- Two UST's were present at the Cow Camp maintenance shop. According to RMV personnel, these UST's were removed in 2003 under appropriate regulatory guidance and soil samples were collected to assess the possible presence of contamination. Analytical results from the soil sampling did not detect actionable levels of contamination; and the OCHCA closed the tanks. In March 2014, EEI conducted soil vapor testing which indicated the presence of ethylbenzene and xylenes in this area that exceeded residential screening levels. Further investigation may be warranted in prior to development to assess possible soil contamination.

- A geophysical survey identified the location of a suspected burial area in the eastern portion of the Cow Camp storage yard. Soil matrix and soil vapor sampling conducted in August 2014 indicated that soil in one area was impacted with TPH of the diesel and motor oil ranges which exceeded applicable residential screening levels. In addition, soil vapor concentrations of xylenes exceeded the residential screening levels in three of the areas sampled. The widespread distribution suggested that the limits of the vapor plume could exceed the specific areas identified. Further investigation and/or remedial excavation in these areas prior to development appear to be warranted.

- The subject property has been utilized for agricultural purposes (i.e., orchards and nursery). Additional investigation efforts (i.e., soil sampling and analysis) were performed by EEI to further evaluate subject property soils for agricultural chemicals. The results of our agricultural chemical survey revealed concentrations of select organochlorine pesticides (e.g., Dieldrin, DDT and DDE) in site soils. The concentrations of these select organochlorine pesticides were less than applicable residential screening values. The maximum total lead concentrations marginally exceed the residential screening value and maximum total arsenic concentrations were within acceptable background levels. Therefore, further investigation does not appear to be warranted at this time. No additional investigation appears to be necessary at this time.

The following *HREC* has been revealed during the preparation of this ESA.

- **CalMat** (31511 Ortega Highway) was identified as the location of a closed LUST case. Based on the information reviewed, an unauthorized release of diesel was discovered in February 1990. Only the soil was impacted. The cause of the leak and the source of the leak are unknown. The case received regulatory closure on February 5, 1991 from OCHCA. No other pertinent information was noted.

The following *de minimis* conditions were identified during the preparation of this ESA.

- Minor oil stained pavement was previously noted at the Olsen Pavingstone, Solag/CR&R, Cemex, and Ewles facilities during the site reconnaissance. However, there appeared to be no immediate threat to soil and/or groundwater beneath the subject property. No further investigation appears to be warranted.

In addition, although not considered to be RECs, the following non-scope considerations were identified:

- According to the information reviewed, structures on the subject property were built prior to 1978. Therefore, the presence of asbestos-containing materials and lead-based paint within building materials is likely. In addition, stored roofing and construction materials were observed at locations on the property. EEI recommends a pre-demolition hazardous materials survey be performed on the site structures and related building materials, prior to any proposed future site improvements or demolition activities.

- Based on the subject property's historical and ongoing agricultural use, it is possible that buried/concealed agricultural by-products, both below and above ground may have existed or exists on the subject property. Any buried trash/debris, undocumented USTs or other waste encountered during future subject property development should be evaluated by an experienced environmental consultant prior to removal. If stained or suspicious soil is encountered during future grading operations, the material should be evaluated and if deemed necessary, characterized for proper disposal.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* for the subject property identified as the Planning Area Three (PA3) portion of Rancho Mission Viejo (RMV) Ranch Plan Planned Community, located approximately three miles east of the City of San Juan Capistrano, in unincorporated Orange County, California (**Figure 1**). *Recognized environmental conditions (RECs)* include property uses that may indicate the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The term *RECs* is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment, and that would not be subject to enforcement action by a regulatory agency.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, Designation E1527-13.

1.2 Scope of Services

The following scope of services was conducted by EEI:

- A review of readily available documents which included topographic, geologic, and hydrogeologic conditions associated with the subject site.
- A review of readily available maps, aerial photographs and other documents relative to historical subject site usage and development.
- A review of readily available federal, state, county, and city documents and database files concerning hazardous material storage, generation and disposal, active and inactive landfills, existing environmental concerns, and associated permits related to the subject property and/or immediately adjacent sites.
- A site reconnaissance to ascertain current conditions of the subject property.
- Interviews with person(s) knowledgeable of the subject property.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Paskerian, Block, Martindale & Brinton, LLP (Client), and Rancho Mission Viejo, and the County of Orange. This assessment should not be relied upon by other parties without the express written consent of EEI, the Client, Rancho Mission Viejo, and the County of Orange. Any use or reliance upon this assessment by a party other than the Client, Rancho Mission Viejo, or the County of Orange; therefore, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought or based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the subject site, but rather is intended to provide a preliminary indication of onsite impacts from previous site usage and/or the release of hazardous materials. If no significant indicators of the presence of hazardous materials and/or petroleum contamination are encountered during this search, this does not preclude their presence.

The findings in this report are based upon published geologic and hydrogeologic information and information (both documentary and oral) provided by the Client, Rancho Mission Viejo, Orange County, Environmental Data Resources Inc. (EDR®) (i.e., agency database search, and various state and federal agencies, and EEI's field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PHYSIOGRAPHIC SETTING

2.1 Site Description

The subject property consists of proposed development property identified as the Planning Area Three (PA3) portion of Rancho Mission Viejo (RMV), Ranch Plan Planned Community (**Figure 2**). The subject property is located in southeastern Orange County, approximately three miles east of San Juan Capistrano. The subject property is located north of Ortega Highway and San Juan Creek, south of Coto de Caza residential development, west of ~~Casper's~~Caspers Regional Park, and east of Ladera Ranch, Chiquita Canyon and the Gobernadora Ecological Restoration Area (GERA). PA3 is located in Gobernadora Canyon. Gobernadora Creek flows in a southerly direction through the Planning Area to its confluence with San Juan Creek. San Juan Creek, which is a dominant physical feature extending northeast and southwest through the larger Ranch Plan Planned Community, is located south of ~~Planning Area 3~~PA3 (Master Area Plan, 2014) (**Appendix B**).

PA3 encompasses approximately 2,300 acres and is a portion of the following lots, identified by assessor's parcel numbers (APNs) 125-161-03, -04, -30, -41, -91, and -93 (**Appendix B**). According to the County of Orange Planning Department, the subject property is located within the Ranch Plan Planned Community Zoning District (PC).

The majority of the subject property (the northern portion) is undeveloped and covered by thick vegetation. The remainder of the property (the southern portion) is currently occupied by various commercial, industrial, and agricultural businesses, and a few residences, including the following (**Figure 3**):

- Color Spot Nursery (31101 Ortega Highway) encompasses approximately 245 acres and is located in the south-central portion of the subject property. The site is a commercial nursery with a maintenance shop, storage buildings, greenhouses, lined ponds, an irrigation recovery system, and a water filtration/blending station.

- Campo Vaquero aka Cow Camp (31471 Ortega Highway) encompasses approximately fifty acres and is located in the southwestern portion of the subject property. The site includes pasture fields, a maintenance facility, and horse corrals.

- Greenstone Materials and Redi-Mix Concrete (31507 Ortega Highway) encompasses approximately five-acres and is located in the southeastern portion of the subject property. The site is used as a concrete and asphalt recycling operation and a Redi-Mix concrete facility.

- Catalina Pacific Concrete (CPC) North (31511 Ortega Highway), encompasses approximately 16 acres and is located in the southeastern portion of the subject property. The site, the former main CalMat yard facility, is occupied by a concrete batch plant which includes a truck fueling facility, a truck washout area, office building, scale house, maintenance shop, storage buildings, several storage units, and a few sub-tenants, including Sierra Soils, a topsoil and composting producer.

- Olsen Paving (31511 Ortega Highway) encompasses approximately six acres and is located in the southeastern portion of the subject property. The site is occupied by a paving stone manufacturing plant which includes several office trailers, a residential unit, the manufacturing plant, and several storage units.

- Cemex (formerly City Concrete, 31601 Ortega Highway) encompasses approximately four acres and is located in the southeastern portion of the subject property. The site is occupied by a concrete batch plant which includes an office trailer, maintenance trailer, fueling island, truck washout area, and storage shed.

- CR&R/Solag Disposal Company (31641 Ortega Highway) encompasses approximately six acres and is located in the southeastern portion of the subject property. The site is occupied by a waste management facility which includes an office building, maintenance shop, fueling station, waste processing unit, and storage units.

- O'Connell Landscaping (31821 Ortega Highway) encompasses approximately one-half acre and is located in the southeastern portion of the subject property. The site is used as a storage yard which includes several portable storage units.

- Ewles Materials (32501 Ortega Highway) encompasses approximately two and a half acres and is located in the southeastern portion of the subject property. The site is occupied by ~~a recycling and processing plant~~ a concrete and asphalt recycling facility which includes an office trailer, employee trailer, storage unit, a fuel compound, and a wash station.

- A field and lemon groves north of Ewles Materials;

- Several residences (31121, 31151, 31181, 31221, 31241, 31261, 31263, 31265, 31381, and 31825 Ortega Highway) are located along the ridge north of Campo Vaquero, in the southwestern portion of Campo Vaquero along San Juan Creek, and adjacent to the O'Connell Landscaping storage yard.

EEI has previously completed Phase I Environmental Site Assessments for each of these sites, with the exception of Campo Vaquero (Cow Camp), the lemon groves and field, the residential units, and the northern portion (vacant property). A brief summary of each ESA is included in section 3.8 Previous Assessments.

Based on historical records such as aerial photographs, and topographic maps, the subject property was undeveloped land from at least 1938. In 1946 and 1953, small structures and ranching operations appeared on the southern portion of the property. By the 1960's, residential dwellings (in their present configuration) were present along the ridge overlooking the current site of Cow Camp, and several barns were noted on the southern portion of the property. The canyons along the western margin were noted as cleared and possibly cultivated, as was the adjacent property to the west. From the 1960's to the mid-1990's, a sand and gravel mining operation (current site of Cemex and CPC facility), and an asphalt/cement batch plant (current site of CR&R/Solag Disposal Company) were in operation on the southeast portion of the subject property. By the 1970's, a nursery was also present on the southeast portion of the property. In a 1989 aerial photograph, a small area of land in the northern portion appeared with a few small structures, and the western canyons were cleared and cultivated. From 1989 through the present time, the property has remained in its current configuration with the exception of changes to the property tenants.

2.2 Topography

The site is located on a southward-sloping terrace, just north of San Juan Creek. Site elevations range from approximately 250 feet above mean sea level (amsl) along the southern margin of the subject property, to approximately 750 feet amsl along the northern margin (USGS, 2012). The average topographic gradient in the site vicinity is to the south/southeast at approximately 0.13 feet per foot.

2.3 Regional and Local Geology

The site is located in an alluvial valley (San Juan Creek) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block (CDMG, 2002).

Sedimentary deposits in the San Juan Creek area are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations. These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity (Morton, 1974).

Soils in the southern portion of the site, along the creek, have been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging to the Modjeska, Myford, and Riverwash associations (USDA, 1978). Soils in these associations are typically found on broad, gently to moderately-sloping river terraces and consist mainly of well drained gravelly and sandy loams. Soils in the northern portion of the property have been identified by the USDA as belonging to the Cieneba and Corralitos associations. Soils in these associations are typically found on ridgetops and in long narrow areas, respectively. They are somewhat excessively drained sandy loams and loamy sands.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 15 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1999). Other major faults in the vicinity of the site include the Christianitos Fault (just west of the site), and the Newport Inglewood Fault (southwest of the site).

2.4 Regional and Local Hydrogeology

According to the California Regional Water Quality Control Board - San Diego Region (SDRWQCB, 1994), the northern portion of the subject property lies within the Gobernadora Hydrologic Subarea of the San Juan Hydrologic Unit and the southern portion of the subject property lies within the Middle San Juan Hydrologic Subarea of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet bgs.

The Gobernadora Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately south of the site), Canada Chiquita (west of the site), and Canada Gobernadora (west of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

2.5 Hydrologic Flood Plain Information

EEI reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) online database to determine if the subject property was in a flood zone. According to FIRM map (FM06059C0465J), the southern portion of the site near San Juan Creek lies within an area designated Zone A, an area defined as a 100-year flood zone. The remainder of the site lies outside of the flood plain within an area designated Zone X (i.e. outside a 500-year flood plain). A copy of the FIRM map is included in **Appendix B**.

3.0 SITE BACKGROUND

3.1 Site Ownership

Information regarding the subject property ownership was obtained from a First American Title Company Preliminary Title Report (PTR), dated December 1, 2014. According to the PTR, the current owner of the subject property (APNs 125-161-03, -04, -30, -41, -91, and -93), is listed as DMB San Juan Investment North, LLC, a Delaware Limited Liability Company. A copy of the PTR is included in **Appendix B**.

3.2 Site History

EEI reviewed readily available information sources to evaluate historic land use in and around the subject site. These information sources include aerial photographs, and USGS maps. The information sources are reviewed in the following sections.

3.2.1 Historical Use Review

Aerial photographs and historical topographical maps, provided by EDR®, were reviewed to identify historical land development and any surface conditions which may have impacted the subject property. Photographs and historical topographic maps dating between 1901 and 2002 were reviewed. A 2014 aerial photograph was obtained from Google Earth®, of which is included herein (**Figure 2**).

Table 1 summarizes the results of the aerial photograph and historical topographic map review. Copies of the aerial photographs and historical topographic maps provided by EDR®, Inc. are included in **Appendix C**.

According to the information reviewed, the subject property was a mix of undeveloped land on the majority of the property (northern portion) and agricultural fields on the southern portion from at least 1938. In 1946 and 1953, small structures and ranching operations appeared on the southern portion of the property. By the 1960's, residential dwellings (in their present configuration) were present along the ridge overlooking the current site of Cow Camp, and several barns were noted on the southern portion of the property. The canyons along the western margin were noted as cleared and possibly cultivated, as was the adjacent property to the west. From the 1960's to the mid-1990's, a sand and gravel mining operation (current site of Cemex and CPC facility), and an asphalt/cement batch plant (current site of CR&R/Solag Disposal Company) were located on the southeast portion of the subject property. By the 1970's, a nursery was also present on the southeast portion of the property. In a 1989 aerial photograph, a small area of land in the northern portion appeared with a few small structures, and the western canyons were cleared and cultivated. From 1989 through the present time, the property has remained in its current configuration with the exception of changes to the property tenants.

TABLE 1
Summary of Historical Use Review

Year	Source and Scale	Comments
1901/ 1902	Topographic Map 1:250,000	Scale of the map did not allow for a detailed review of the subject property. Site vicinity seen as within an area labeled as Mission Viejo.
1938	Aerial Photograph 1:500	Subject property and surrounding area appeared as undeveloped land, consisting of ridgelines and drainages covered with thick vegetation, generally trending in a north-south direction. Several unimproved roads/trails were seen in this portion of the property. The southern portion of the subject property, north of San Juan Creek, appeared with agricultural fields. Roads accessing this portion of the property were present as well as Ortega Highway to the south.
1942	Topographic Map 1:50,000	No developed structures appeared on the subject property. Unimproved roads were seen along the western and eastern margins and through the center of the property. Bell Canyon was noted to the east. Ridgelines and drainages appeared in the site vicinity. San Juan Creek and Ortega Highway were noted to the south.
1946	Aerial Photograph 1:500	Southern portion of the subject property (north of San Juan Creek) were developed for agriculture with some small structures present. A residential structure and trailer were noted in the present-day O'Connell area. The remaining portions of the property remained as undeveloped land.
1949	Topographic Map 1:24,000	No apparent changes were noted to the subject property or adjacent property since the 1942 map.
1953	Aerial Photograph 1 inch = 500 feet	Six structures were noted along San Juan Creek in the southern portion of the subject property. A residential structure and trailer remained in the present-day O'Connell area. The agricultural field south of the present maintenance area was noted, although the maintenance area was vacant. No other structures were noted on the subject property, and the remainder of the property was noted as vacant.
1967	Aerial Photograph 1 inch = 500 feet	CalMat was noted in the southeast corner (on present CPC, Cemex, and Solag lease areas), and two terraces north of CalMat were farmed. Several large ponds were noted between CalMat and San Juan Creek. Houses (in their present configuration) were present along the ridge overlooking cow camp. Three barns were noted along the cow camp entrance road (two that are present today and one in the cow field). The large barn and corrals were noted in the southwest corner of the property, in their current configuration. Two medium sized structures were noted in the maintenance area. A residence and trailer were still noted in the O'Connell area. The canyons along the western margin were noted as cleared and possibly cultivated. The property adjacent to the west was cultivated. All other areas were vacant and covered with thick brush.
1968/ 1975	Topographic Map 1:24,000	Mining operations appeared in the southeast portion of the property, and a gravel pit was located along San Juan Creek. Two water tanks and approximately thirty structures were noted along San Juan Creek Haul Road (the southern margin of the property).
1977	Aerial Photograph 1 inch = 500 feet	Color Spot Nursery was partially present. The maintenance area in cow camp was occupied by two large barns and the area south (the cow field) was cultivated. The houses in the western portion of cow camp were present in their current configurations. No other changes were noted.
1980/ 1982/ 1988	Topographic Map 1:24,000	Two large structures and two rows (dirt roads) appeared in the cultivation area of Color Spot Nursery. In 1982, approximately ten more small structures on the subject property along southern margin and two small structures north of Color Spot Nursery. Four rows (dirt roads) are noted across Color Spot Nursery. The 1988 map notes the presence of three more small structures at the Color Spot Nursery property.

TABLE 1
Summary of Historical Use Review

Year	Source and Scale	Comments
1989	Aerial Photograph 1 inch = 500 feet	A small portion of land in northern area is cleared with a few small structures, possibly vehicles. Western canyons were cleared and cultivated. Cow camp was noted in its current configuration with the exception of two medium-sized structures that were present along the access road from Ortega Highway. CalMat was noted to occupy the southeast portion, including the area currently occupied by Solag, Cemex, and CPC. Olsen Pavingstone area was vacant and covered with thick vegetation. The current Ewles area was occupied by roads, and otherwise vacant. The property ~~appeared to~~ along Cow Camp Road and southwest of the present day Color Spot Nursery was cultivated. No other pertinent changes were noted. CalMat was noted to occupy the Olsen lease area. Terraces north of CalMat and east of Color Spot were cultivated, as well as the field south of the cow camp maintenance area. Western canyons were cleared and cultivated, and the adjacent property to the west was cultivated.
1994	Aerial Photograph 1 inch = 500 feet	Cow camp appears in its current configuration. The orchards east of Color Spot Nursery were cleared but not cultivated. The lease areas of Olsen and Ewles were occupied by their current occupants. The Solag, Cemex, and CPC lease areas were occupied by CPC. No other pertinent changes were noted.
1997	Topographic Map 1:24,000	Several structures and unimproved roads remained along the southern margin of the property. No changes were noted on the northern portion of the property.
2002	Aerial Photograph 1 inch = 500 feet	The Cemex and Solag lease areas were noted in their present configurations. The western margin and some canyons were cleared and possibly cultivated. The northern portion remained vacant. St. Augustine's area was cleared and vacant. The O'Connell storage yard was vacant, with the adjacent trailer and residence present. The subject property was noted in its current configuration. No pertinent changes were noted. The O'Connell storage yard was noted; however, no fence was noted. No other pertinent changes were noted.
April 2014	Aerial Photograph Google Earth (Color)	The subject property was noted in its current configuration. No pertinent changes were noted.

3.2.2 City/County Directories

Directory listings associated with the subject property and street addresses located adjacent to and surrounding the subject property was obtained from EDR®, an environmental information/database retrieval service, as well as researched during a previous report, in Criss Cross and Haines City/County Directories for Orange County at the Main Library in Santa Ana, California. Addresses along the 20000 and 30000 block of Ortega Highway were listed in sources researched dated from 1972 through 2010. A copy of the EDR City Directory Report is provided in **Appendix C**.

Within the subject property there are at least 17 addresses along Ortega Highway: 31101, 31121, 31151, 31181, 31221, 31241, 31261, 31263, 31265, 31381, 31471, 31507, 31511, 31601, 31641, 31821, 31825, and 32501. Most of the addresses associated with the subject property were either not listed in the directories reviewed by EEI, or were residential listings. **Table 2** summarizes the information reviewed in the directories for the non-residential addresses.

TABLE 2
Site Tenants/Occupants

Year	Subject Property Addresses - Ortega Highway						
	31101A	**31411**	**31807**	**31511**	**31601/41**	**31821**	**32501**
1952	No Listing	No Listing	No Listing	No Listing	No Listing	No Listing	No Listing
1972	No Listing	Highland Ranch	No Listing	Conrock, Co. Griffith Co.	No Listing	No Listing	American Cement Corp
1975	No Listing	No Listing	No Listing	Conrock Co. Griffith Co.	No Listing	No Listing	American Cement Corp
1980	Oshita Michael	Grimmway Farms	No Listing	Conrock Co. Huntmix Inc.	No Listing	No Listing	American Cement Corp
1985	Axton EDW	Kotake Bros.	No Listing	Huntmix Inc.	No Listing	No Listing	No Listing
1990	Lenz Paul	No Listing	No Listing	Ewles Materials Olsen Pavingstone	No Listing	No Listing	Riverside Cement
1996	No Listing	No Listing	No Listing	Catalina Pacific Concrete (CPC) Ewles Materials Olsen Pavingstone	No Listing	No Listing	No Listing
1999	Rollin Green	No Listing	No Listing	Bestone Constr., Ewles Materials, Olsen Pavingstone	City Concrete	No Listing	Ewles Materials
2003	Color Spot Nursery	No Listing	No Listing	CPC Lake Forest Nursery	Cemex/ Solag Disposal CR&R	No Listing	John Ewles
2008	Color Spot Nursery	No Listing	No Listing	Bestone Constr. CA Portland Cement Ewles Materials Olsen Pavingstone	Cemex/ Solag Disposal CR&R	No Listing	No Listing
2013	Rollin Green	No Listing	No Listing	Bestone Constr. CPC Ewles Materials Olsen Pavingstone Pac. Outdoor Living Southwest Crushing	No Listing/ Solag Disposal CR&R	No Listing	No Listing

3.2.3 Sanborn Fire Insurance Maps

EEI researched available Sanborn Fire Insurance Maps of the subject property. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. EEI requested a Sanborn map search from EDR®, an environmental information/database retrieval service. According to EDR, there is no Sanborn map coverage for the area of the subject property (**Appendix C**).

3.2.4 Orange County Building and Safety Department Files

EEI reviewed files at the Orange County Building and Safety Department (OCBSD) regarding historical and present site development. The OCBSD does not issue permits to sites without addresses. Permits were on file for the properties at 31101, 31181, 31221, 31263, and 31265 Ortega Highway. According to OCBSD personnel, the remainder of the subject property addresses did not have files at the OCBSD available for review. The following is a summary of the files reviewed.

- June 1965 - A permit was issued for the construction of a dwelling with attached garage at 31181 Ortega Highway and 31221 Ortega Highway

- October 1973 - A permit was issued for the construction of a greenhouse at 31101 Ortega Highway.

- May 1985 - A grading permit was issued at 31263 Ortega Highway for Ranch House sites.

- May/April 1985 - A grading permit was issued at 31265 Ortega Highway for Ranch House sites. In April the permit was issued for 1,900 cubic yards of grading for a single family home. No other pertinent items were noted

3.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the subject site, as well as adjacent sites with known environmental concerns. Facilities were identified by county, state, or federal agencies that generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from EDR®, an environmental information/database retrieval service. A copy of the EDR® report is provided in **Appendix D,** along with a description of the individual databases. Following is a list of databases that were reviewed in the preparation of this report.

An occupant of the subject property, **Catalina Pacific Concrete** (31511 Ortega Highway); was listed under the following databases: RCRA Hazardous Waste Generator (SQG); Registered Underground Storage Tank (UST and HIST UST); Above-ground Storage Tank (AST); Facility Inventory Database (CA FID UST); Statewide Environmental Evaluation and Planning System (SWEEPS); National Pollutant Discharge Elimination System (NPDES); DTSC's Site Cleanup (CORTESE); DTSC Hazardous Waste Manifests (HAZNET); Toxic and Criteria Pollutant Emissions (EMI); and Waste Discharge System (WDS).

Other listings for occupants of the subject property included the following. **Cow Camp** aka **Rancho Mission Viejo** (31471/74 Ortega Highway), was reported under the RCRA SQG, CA FID UST, CORTESE, and HAZNET databases. **Solag Disposal** (31641 Ortega Highway) was reported under the landfill and/or solid waste disposal site database, NPDES, and HAZNET databases. ~~**Olsen Pavingstone, Inc.** aka~~ **Calmat** (former) (31511 Ortega Highway) was reported under the ~~leaking underground storage tank database (~~LUST~~)~~, NPDES, HAZNET, EMI, and WDS databases. **CR&R, Inc.** (31641 Ortega Highway) was listed under the UST database, HAZNET, and Landfill databases. **Greenstone Materials, Inc.** (31507 Ortega Highway); was listed under the US Mines database as the former site of the Lucas Canyon Quarry, and the NPDES database. **Ewles Materials** (32501 Ortega Highway); was listed under the NPDES, EMI, and WDS database. **Cemex** (31601 Ortega Highway) was listed under the NPDES, and HAZNET database.

3.3.1 Federal Databases

Federal National Priority site list (NPL) – No listings were reported within a one and one-half mile radius of the subject property.

Federal Delisted NPL site list – No listings were reported within a one and one-half mile radius of the subject property.

Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list – No listings were reported within a one and one-half mile radius of the subject property.

Federal CERCLIS No Further Assessment Planned (NFRAP) site list – No listings were reported within a one and one-half mile radius of the subject property.

Federal Resource Conservation Recovery Act (RCRA) Corrective Action Sites (CORRACTS) facilities list – One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

Federal RCRA non-CORRACTS facilities list – No listings were reported within a one and one-half mile radius of the subject property.

Federal RCRA non-CORRACTS Treatment, Storage and Disposal (TSD) facility list (RCRA-TSDF) – No listings were reported within a one and one-half mile radius of the subject property.

Federal RCRA generators list (RCRA-LQG SQG CESQG) – Two occupants of the subject property, and four sites within a one and one-half mile radius of the subject property were reported. **Catalina Pacific Concrete** (31511 Ortega Highway); and **Rancho Mission Viejo** (31474 Ortega Highway), were listed under RCRA Generator database as small quantity (SQG) hazardous waste generators No violations were noted.

Generator permits are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites has reported a release under the LUST database. ~~**Catalina Pacific Concrete** aka **Calmat** was reported as the site of a release and is discussed below under the Leaking Underground Storage Tank (LUST) database. Rancho Mission Viejo has not reported a release.~~

The remaining listings are located greater than one-half mile from the subject property. Based on the distance from the subject property (i.e., over one-half mile), the position (i.e., downhill/downgradient), and/or status (i.e., case closure), these sites are not considered as environmental concerns at this time.

Federal institutional controls/engineering controls (IC/EC) registries – No listings were reported within a one and one-half mile radius of the subject property.

Federal Emergency Response Notification System (ERNS) – One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

3.3.2 State and Regional Sources

State and Tribal equivalent NPL sites – No listings were reported within a one and one-half mile radius of the subject property.

State/Tribal equivalent CERCLIS (ENVIROSTOR) sites – One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

State and tribal landfill and/or solid waste disposal site lists – An occupant of the subject property, **Solag Disposal** (31641 Ortega Highway) was reported on this database. As of March 4, 1999 the site has been closed. Additional details regarding the site are discussed below in Section 3.8 Previous Assessments.

State and tribal leaking storage tank lists (LUST) – An occupant of the subject property, and four sites within a one and one-half mile radius of the subject property were reported. ~~**Olsen Pavingstone, Inc.** aka~~ **Calmat** (former) (31511 Ortega Highway) was reported as the site of diesel/gasoline release in February 1990. The release case site was incorrectly identified as Olsen Pavingstone, Inc. under the LUST database. The OCHCA closed the site in February 1991. Additional details regarding ~~this site~~the Calmat release case are provided below in Section 3.4.4, SWRCB and Section 5.0 Vapor Encroachment Screening.

The **Mission Viejo Sand Plant** aka California Silica Products (30302 Ortega Highway, approximately one half mile south of the subject property) reported a gasoline release on March 17, 1993. Reportedly, only the surrounding soil was impacted and the case was closed March 14, 1994. The nearby ~~**Caspar's**~~ **Caspers Wilderness Park** (33401 Ortega Highway, approximately one and one-half miles south of the subject property) reported as gasoline release on January 21, 2004. Reportedly, only the surrounding soil was impacted. Soil sampling and analysis was conducted and the case was closed August 29, 2006. **Chiquita Water Reclamation Plant** (28793Ortega Highway, approximately one mile west of the subject property) was listed as the site of an automotive gasoline release. The case was listed as closed by OCHCA on October 19, 2001. **Ford Aerospace** (33600 Ortega Highway, approximately two miles south of the subject property) reported as gasoline release on January 1, 1965. Reportedly, only the surrounding soil was impacted. The contaminated soil was removed and the case was closed March 19, 1992.

Based on the distance from the subject property (i.e., over one-half mile), and status (i.e., case closure), the aforementioned sites are not considered as environmental concerns at this time.

State and tribal leaking storage tank lists (SLIC) – No listings were reported within a one and one-half mile radius of the subject property.

State and tribal registered storage tank lists (UST) – Two occupants of the subject property, and six sites within one mile of the subject property were reported. **Catalina Pacific Concrete** (31511 Ortega Highway); and **CR&R, Inc.** (31641 Ortega Highway), were listed under the UST database.

UST permits are not generally rationale for environmental concern, unless a release has occurred at the site. ~~**Catalina Pacific Concrete** aka **Calmat** was reported as the site of a release and is discussed above under LUST database. CR&R has not~~. Neither of the aforementioned sites has reported a release under the LUST database. ~~Additional information regarding these UST sites is provided below in Section 5.0 Vapor Encroachment Screening.~~

The remaining listings are located greater than one-half from the subject property. Based on the absence of a reported release, distance from the subject property (i.e., over one-half mile), and/or the position (i.e., downhill/downgradient), these sites are not considered as environmental concerns at this time.

Above-Ground Storage Tanks – Two occupants of the subject property, and five sites within a one and one-half mile radius of the subject property were reported. **Catalina Pacific Concrete** (31511 Ortega Highway), and **CR&R, Inc.** (31641 Ortega Highway), were listed under the AST database.

AST permits are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites has reported a release. .

The remaining listings are located greater than one-half mile from the subject property. Based on the absence of a reported release, distance from the subject property (i.e., over one-quarter mile), and/or the position (i.e., downhill/downgradient), these sites are not considered as environmental concerns at this time.

State and Tribal voluntary cleanup sites – No listings were reported within a one and one-half mile radius of the subject property.

Local Brownfield lists – No listings were reported within a one-half mile radius of the subject property.

Local Lists of Landfill and Hazardous Waste/Contaminated Sites – No listings were reported within a one and one-half mile radius of the subject property.

Facility Inventory Database (CA FID UST) and Statewide Environmental Evaluation and Planning System (SWEEPS) – Two occupants of the subject property, and four sites within a one and one-half mile radius of the subject property were reported. **Catalina Pacific Concrete** (31511 Ortega Highway); and **Rancho Mission Viejo** (31474 Ortega Highway), were listed. UST permits are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites have reported a release under the LUST database.

The remaining listings were either dual listed and discussed under other databases, and/or are located more than one-half mile of the subject property and are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

Local Lists of Registered Storage Tanks (HIST UST) – One occupant of the subject property, **Catalina Pacific Concrete** (31511 Ortega Highway), and one additional site within a one and one-half mile radius of the subject property were reported. UST permits are not generally rationale for environmental concern, unless a release has occurred at the site. The aforementioned site has not reported a release under the LUST database.

The remaining listing, **Mission Viejo Sand Plant** (31302 Ortega Highway), was dual listed and discussed under other databases, and is located more than one-half mile of the subject property and is situated hydrologically cross- to down-gradient. Based on this information this site is not expected to represent a significant environmental concern.

California Hazardous Material Incident Report System (CHMIRS) – Five listings were reported for the same site, **Santa Margarita Water District** (33608 East Ortega Highway, one and one-half mile northeast). Based on its location (i.e. more than one-half mile of the subject property), this site is not expected to represent a significant environmental concern.

Local Land Records – No listings were reported within a one-half mile radius of the subject property.

Records of Emergency Release Reports – No listings were reported for the subject property.

RCRA Non-GEN – One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

US Mines- One occupant of the subject property and one additional site within a one and one-half mile radius of the subject property were reported. **Greenstone Materials, Inc.** (31507 Ortega Highway); was listed as the former site of the Lucas Canyon Quarry. The mine was listed as a non-coal mining facility which was abandoned in 2012. The second listing, **Lapeyre Industrial Sands** (31302 Ortega Highway, approximately one half mile south of the subject property) was listed as an active non-coal mining facility. The site is located greater than one-half mile from the property; therefore, it is not considered a concern.

PCB Activity Database (PADS) - One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

Facility Index System (FINDS) - Eight listings were reported within a one and one-half mile radius of the subject property. The listings were either dual listed and discussed under other databases, and/or are located more than one-half mile of the subject property and are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

Underground Wells (UIC) - Two listings were reported within a one and one-half mile radius of the subject property. The listings were located more than one-half mile of the subject property and/or are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

National Pollutant Discharge Elimination System (NPDES) – Five listings for occupants of the subject property were reported. The listings included: **Greenstone Materials, Inc.** (31507 Ortega Highway); **Olsen Pavingstone, Inc.** (31511 Ortega Highway); **Solag Disposal** (31641 Ortega Highway), **Ewles Materials** (32501 Ortega Highway); and **Cemex** (31601 Ortega Highway). NPDES permits are not considered an environmental concern.

DTSC's Hazardous Waste and Substances Site List - Site Cleanup (CORTESE) No Longer Updated (Hist CORTESE) – Two occupants of the subject property, and four sites within a one and one-half mile radius subject property were reported. **Olsen Pavingstone** and **Catalina Pacific Concrete** (31511 Ortega Highway); were listed. CORTESE listings are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites has reported a release under LUST database.

The remaining listings were dual listed and discussed under other databases, and is located more than one-half mile of the subject property and is situated hydrologically cross- to down-gradient. Based on this information this site is not expected to represent a significant environmental concern.

SWRCB Enforcement (ENF) - One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

DTSC Hazardous Waste Manifests (HAZNET) - Five occupants of the subject property and four sites within a one and one-half mile radius of the subject property were reported. The listings for the subject property included: **Rancho Mission Viejo** (31471 Ortega Highway); **Olsen Pavingstone, Inc.** (31511 Ortega Highway); **Solag Disposal** (31641 Ortega Highway), **CR&R** (31641 Ortega Highway); and **Cemex** (31601 Ortega Highway). HAZNET permits are not generally rationale for environmental concern, unless a release has occurred at the site. None of the aforementioned sites have reported a release under the LUST database.

The remaining listings were either dual listed and discussed under other databases, and/or are located more than one-half mile of the subject property and are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

Toxic and Criteria Pollutant Emissions (EMI) - Four occupants of the subject property, and four sites within a one and one-half mile radius of the subject property were reported. **Catalina Pacific Concrete**, **Olsen Pavingstone, Inc.**, and **Industrial Concrete** (31511 Ortega Highway); and **Ewles Materials** (32501 Ortega Highway), were listed. EMI permits are not generally rationale for environmental concern, unless a release has occurred at the site. None of the aforementioned sites have reported a release under the LUST database.

The remaining listings were either dual listed and discussed under other databases, and/or are located more than one-half mile of the subject property and are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

Hazardous Waste Facilities (HWP) - One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

Aerometric Information Retrieval System (US AIRS) Air Pollutants - One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

Waste Discharge System (WDS) - Two occupants of the subject property, and one site within a one and one-half mile radius of the subject property were reported. **Olsen Pavingstone, Inc.** (31511 Ortega Highway); and **Ewles Materials** (32501 Ortega Highway), were listed. WDS permits are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites has reported a release under the LUST database.

The remaining listing is located more than one-half mile of the subject property and situated hydrologically cross- to down-gradient; and is and is therefore not considered a concern.

Notify 65– No listings were reported within a one and one-half mile radius of the subject property.

EDR US Historical Auto Station list – No listings were reported within a one and one-half mile radius of the subject property.

EDR US Historical Cleaners – No listings were reported within a one and one-half mile radius of the subject property.

EDR Recovered Government Archives– No listings were reported for the subject property.

Recovered Government Archive (RGA) LUST – An occupant of the subject property, and one site within a one and one-half mile radius of the subject property were reported. **Calmat** (former) (31511 Ortega Highway); was listed. Additional details regarding the Calmat release case are provided below in Section 3.4.4, SWRCB and Section 5.0 Vapor Encroachment Screening.

The remaining listing was dual listed and discussed under other databases, and is located more than one-half mile of the subject property and situated hydrologically cross- to down-gradient. Based on this information this site is not expected to represent a significant environmental concern.

Landfill Database (RGA LF) – Two occupants of the subject property were reported. **Solag Disposal** and **CR&R** (31641 Ortega Highway); were listed. These sites were dual listed and discussed under other databases above.

Orphan Summary - The EDR® database search report lists a number of sites identified as "orphans." EDR was unable to confirm the physical locations of these sites relative to the subject property or to assess whether they were located within the designated search radii. EEI attempted to locate these "orphan" sites, to the extent possible, using various maps and our knowledge of the site area. Any of the "orphan" sites determined to be within the designated search radii were included in our evaluation of the various listed sites potential to result in a recognized environmental condition relative to the subject property.

3.4 Regulatory Agency Review

3.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authorities (OCFA) Community Right to Know Records Office for information regarding hazardous materials inventory, Business Emergency Plan, or Code Enforcement or Inspections at the subject property.

EEI obtained records regarding routine inspection and hazardous material storage at the subject property, issued by the OCFA. The OCFA provided EEI with inspection reports on file dating from December 2012 to May 2014 for several onsite facilities. Copies of the inspection reports, which include lists of specific chemicals stored and the maximum daily amount permitted for storage is given in **Appendix E.** A summary of the OCFA records is summarized below:

Color Spot Nursery (31101 Ortega Highway) (Category 4, Low/Routine Hazards) - the operator holds hazardous materials operating permits for oxidizing, corrosive, flammable, highly toxic, unstable reactive materials, liquefied petroleum gas, motor vehicle fuel dispensing, and welding carts. The inspection report provided, dated December 8, 2012, notes the following chemicals stored onsite: gasoline, propane, sodium nitrate, potassium chloride, potassium nitrate, calcium phosphate, glyphosate, phosphoric acid, and metaldehyde. There were no indications of violations, hazardous materials spills, or emergency responses in Fire Department files.

Verizon Wireless (31101 Ortega Highway) (Category 5, No Hazardous Materials) - the operator holds hazardous materials operating permits for flammable combustible liquids. The inspection report provided, dated December 12, 2012, notes the following chemicals stored onsite: diesel fuel and battery electrolyte (sulfuric acid). There were no indications of code violations, hazardous materials spills or emergency responses in OCFA files.

Rancho Mission Viejo Warehouse Storage aka **Cow Camp** (31471 Ortega Highway) (Category 4, Low/Routine Hazards) - the operator holds hazardous materials operating permits for corrosive materials, motor vehicle fuel dispensing, welding carts and flammable gas. The inspection report provided, dated April 8, 2013, notes the following chemicals stored onsite: notes the following chemicals stored onsite: acetylene gas, diesel fuel (diesel oil and naphthalene, and ehtylbenze), motor oil, oxygen, gasoline, waste motor oil, waste coolant, urea (nitrogen fertilizer), tractor hydraulic fluid, slugyo snail and slug bait, simfrol 90 DF (herbicides), prozap snail and slug bait, rozol (ground squirrel bait), manganese sulfate, zinc sulfate, Lorsban 4E insecticide, Glyfos (herbicide), water conditioner, Champ Formula (fungicide), Agrimek (insecticide), Amine 4 2, 4-D (weed killer), Activator 90 (surfractant), and battery electrolyte (sulfuric acid). There were no indications of code violations, hazardous materials spills or emergency responses in OCFA files.

Greenstone Materials (31507 Ortega Highway) (Category 5, No Hazardous Materials) - the operator holds hazardous material operating permits for explosives/blasting agents, and fireworks/rocketry. No other information was provided on the inspection report for this site. The inspection report provided, dated March 11, 2014, and did not note any chemicals stored onsite. No other information was provided on the inspection report.

Catalina Pacific Concrete (31511 Ortega Highway) (Category 4, Low/Routine Hazards) - the operator holds hazardous materials operating permits for corrosive materials, motor vehicle fuel dispensing, welding carts and flammable gas. The inspection report provided, dated April 12, 2013, notes the following chemicals stored onsite: notes the following chemicals stored onsite: WRDA 64, Polyheed 997 (trihydroxytriethlamin), Polarset (calcium nitrate and diethylene glycol), cement, fly ash, diesel fuel, Right Off 650, DCI-S (calcium nitrate and chloride), Daratard 17, liquid color, and Eclipse TM Floor. There were no indications of code violations, hazardous materials spills or emergency responses in OCFA files.

Cemex/City Concrete (31511 Ortega Highway) (Category 4, Low/Routine Hazards) - the operator holds hazardous materials operating permits for corrosive materials, motor vehicle fuel dispensing, hot work (i.e. welding equipment). The inspection report provided, dated April 10, 2013, notes the following chemicals stored onsite: diesel fuel, potassium hydroxide, fatty acid salts, sodium hydroxide, WRDA 64, calcium nitrate, nitrate compounds, waste oil, Portland cement, oxygen, motor oil, hydraulic oil, antifreeze, fly ash, and other related chemicals. There were no indications of code violations, hazardous materials spills or emergency responses in the files.

Olsen Pavingstone, Inc. (31511 Ortega Highway) (Category 4, Low/Routine Hazards) - the operator holds hazardous materials operating permits for flammable combustible liquids, liquefied petroleum gas, welding cards and flammable gas. The inspection report provided, dated April 3, 2013, notes the following chemicals stored onsite: diesel fuel, and propane. There were no indications of code violations, hazardous materials spills or emergency responses in the files. A list of chemicals stored and the maximum daily amount permitted for storage is given in **Appendix E**

Bestone II Interlock (31511 Ortega Highway) (Category 4, Low/Routine Hazards) - the operator was listed with no permit information with a date last inspected on October 7, 2010. No other information was provided on the inspection report for this site. No other information was provided on the inspection report for this site.

CalMat Company (31511 Ortega Highway) (Category 5, No Hazardous Materials) - the operator was listed with no permit information and no date of last inspection listed. No other information was provided on the inspection report for this site.

Industrial Asphalt (31511 Ortega Highway) (Category 5, No Hazardous Materials) - the operator was listed with no permit information. No other information was provided on the inspection report for this site.

CR&R (31641 Ortega Highway) (Category 4, Low/Routine Hazards) - the operator holds hazardous materials operating permits for flammable/combustible liquids, liquefied petroleum, motor vehicle fuel dispensing, and welding carts. The inspection report, dated May 19, 2014, notes the following chemicals stored onsite: oxygen gas, acetylene, MT-55 acculube (Gear Lube), transmission oil, antifreeze, diesel fuel, plastic gloss brown paint, gasoline, Tekusolu II parts cleaner, engine oil, waste oil, transmission oil, hydraulic oil, solvents, liquid natural gas, and propane. There were no indications of code violations, hazardous materials spills or emergency responses in OCFA files.

O'Connel Landscape Maintenance (31821 Ortega Highway) (Category 5, No Hazardous Materials) – was not listed with any hazardous materials permit, and the last inspection was on March 3, 2006.

Ewles Materials (32501 Ortega Highway) (Category 4, Low/Routine Hazards) - the operator currently holds permits for motor vehicle fuel dispensing and hot work (reissuance). The inspection report, dated April 25, 2014, notes the following chemicals present onsite: diesel, oxygen gas, waste oil and motor oil. No other hazardous materials were noted. The inspection noted no violations. No other pertinent information was noted.

3.4.2 Orange County Health Care Agency

EEI reviewed OCHCA Environmental Health Department online databases including the Hazardous Waste Facilities, Industrial Cleanup program, Local Oversight Program (LOP), Non-petroleum Underground Storage Tanks, and Underground Tank Facilities (UTF) Listing, and Land Fill Sites (maintained by the California Integrated Waste Management Board), to determine if the subject property was listed as having an environmental concern. The following is a summary of the databases reviewed which were updated as of December 1, 2014.

Above-Ground Petroleum Storage Tanks

Listings for occupants of the subject property included: **Color Spot Nursery** (31101 Ortega Highway); **Cemex** (31601 Ortega Highway); **Olsen Pavingstone** (31511 Ortega Highway); **CR&R** (31641 Ortega Highway); and **Greenstone Materials** (31507 Ortega Highway.

Hazardous Waste Facilities Database

Listings for occupants of the subject property included: **San Juan Company** (31471 Ortega Highway); **Color Spot Nursery** (31101 Ortega Highway); **Ewles Materials** (32501 Ortega Highway); **Cemex** (31601 Ortega Highway); **Olsen Pavingstone** (31511 Ortega Highway); **CR&R** (31641 Ortega Highway); and **Greenstone Materials** (31507 Ortega Highway).

Industrial Cleanup Program

No listings were reported for the subject property.

Local Oversight Program (LOP)

Listings for occupants of the subject property included: **Calmat** (31511 Ortega Highway); as the site of a diesel fuel oil and additive release which was closed by the OCHCA on February 5, 1991.

Non-Petroleum Underground Storage Tanks

No listings were reported for the subject property.

Underground Tank Facilities (UTF)

Listings for occupants of the subject property included: **Catalina Pacific Concrete** (31511 Ortega Highway); and **CR&R** (31641 Ortega Highway).

Land Fill Sites

No listings were reported for the subject property.

In addition specific information regarding the **Cow Camp** maintenance facility aka **Campo Vaquero** (31471 Ortega Highway) was requested from the OCHCA and additional data was obtained from Rancho Mission Viejo during previous assessments. The following is a summary of the information regarding contained in OCHCA Files and from the information provided by Rancho Mission Viejo.

- Cow Camp aka Campo Vaquero (31471 Ortega Highway) was formerly permitted to operate two underground storage tanks (UST): one 10,000-gallon diesel UST and one 500-gallon waste oil UST, both installed in 1988.

  Annual UST inspections had occurred irregularly at the site over the past 15 years. An inspection available for review in the OCHCA files, performed in March 2001 noted the following violations: failure to correct previous violations within 30 days; failure to obtain or show evidence of financial responsibility; failure to annually test and/or submit proof of installation of pipeline leak detectors; failure to annually test certify continuous monitoring device; and the Ronan monitor was showing an alarm in the diesel sump. The inspector noted that the cause of the alarm needed to be investigated and to make any necessary repairs to the tank system. Other past UST inspections have noted such violations as failure to develop leak response plan to remove an unauthorized release from secondary containment and that, according to an employee, the diesel tank had been empty for over a year (as documented in 2000).

  Hazardous waste annual inspections had occurred at the same irregular periods. The most recent inspection report available for review was performed in March 2001. The inspector noted the following waste streams at the site: waste oil (maximum daily storage volume 500-gallons); used oil filters (maximum daily storage volume 200 filters); floor sweep with oil (maximum daily storage volume 60 pounds); spent radiator coolant (maximum daily storage volume 55-gallons); and parts cleaner (maximum daily storage volume 20-gallons). No violations were noted at the site during the inspection.

3.4.3 Department of Toxic Substances Control

EEI reviewed the online database EnviroStor (2014), which provides records on LUSTs, SLICs, Priority cleanup sites and states sites, which is maintained by the Department of Toxic Substances Control (DTSC). Neither the subject property nor adjacent property was listed on any of the other databases researched.

3.4.4 State Water Resources Control Board

EEI reviewed the online database GeoTracker (2012), which provides records on LUSTs and Spills, Leaks, Investigation and Cleanup (SLIC) sites, which is maintained by the State Water Quality Control Board (SWRCB, 2014).

No sites within the subject property were listed on the SWRCB databases, with the exception of the former **Calmat site** (31511 Ortega Highway), ~~also listed as~~incorrectly identified as **Olsen Pavingstone, Inc.**, under the EDR LUST database, ~~is~~ located in the southern margin of the subject property.

CalMat was identified as the location of a closed LUST case. Based on the information reviewed, an unauthorized release of diesel was discovered in February 1990. Only the soil was impacted. The cause of the leak and the source of the leak are unknown. The case received regulatory closure on February 5, 1991 from OCHCA. No other pertinent information was noted.

No adjacent sites were listed on the database. Nearby sites listed on the database were determined to be located farther than one-quarter mile from the subject property, and therefore, not considered an environmental concern.

3.4.5 Review of Division of Oil, Gas and Geothermal Resources Files

Oil and gas wells were not observed at the subject property during our site reconnaissance. A review of the California Division of Oil, Gas, and Geothermal Resources Website for oil and gas fields in California and Alaska (CDOGGR, 2014) did not indicate the presence of oil and gas wells on or adjacent to the subject property (identified as within Township 07S, Range 07W).

Based on file data, one petroleum exploration well (Exxon, "O'Neill Estate") was installed in the central portion of the property in 1959 to a total depth of approximately 4,100 feet, and one petroleum exploration well (Texaco Inc., "O'Neill") was installed south of the subject property, along Ortega Highway, in 1964 to a total depth of approximately 3,730. Both wells are marked as "Plugged and Abandoned - Dry Hole."

3.4.6 National Pipeline Mapping System

EEI reviewed the National Pipeline Mapping System (NPMS, 2014) public viewer website for gas transmission pipelines and hazardous liquid trunklines on or close to the subject property. According to the information reviewed, no pipelines are located on or adjacent to the subject property.

3.5 Interview with Current Property Owner

The current property owner for the subject property, DMB San Juan Investment North, LLC, is being represented by the User of this Phase I ESA report (i.e. the Client - Rancho Mission Viejo). Information regarding the subject property was gathered through an interview with the Client and is documented below in Section 3.6.

3.6 Interview with Current Property Occupants/Tenants

EEI contacted the property owner representatives for information regarding the subject property, for which there are ten separate occupants/tenants. To obtain this information, EEI provided the tenant contacts with a questionnaire as well as met with the several tenants (s) during the site reconnaissance. Information provided by each of the property tenants is documented below. Copies of each of the occupant/tenant interview questionnaires are included in **Appendix F**.

Color Spot Nursery - 31101 Ortega Highway

Mr. Rodney Omps, on behalf of Color Spot Nursery, completed the interview regarding this property. Mr. Omps stated that the property is currently used for growing potted flowering plants and shrubs from seeds and cuttings for delivery to retail markets. The facility transports and delivers the finished potted flowering plants and shrubs in tractor trailers and straight over the road trucks which are leased or company owned. Mr. Omps also stated that the site was undeveloped until at least the mid-1970s, when portions of the site appeared to have been developed as a nursery (in the late 1970s). Mr. Omps added that facility expansion has occurred over the years with greenhouse and shade house additions, offices, maintenance areas, and related out-buildings, and that by the late 1980s, the site was developed in a configuration similar to current day. According to Mr. Omps, operations at the site have remained consistent since the nursery began operating at the site.

Mr. Omps stated that the facility currently utilizes the following aboveground storage tanks (ASTs): one 1,500-gallon diesel AST; one 500-gallon portable diesel fuel AST, one 500-gallon waste oil AST; nine 1,000-gallon propane ASTs and one 500 –gallon propane AST. The site also includes one 10,000-gallon potassium AST, one 10,000-gallon nitrogen AST, one 1,500-gallon phosphoric acid AST, two 5,000-gallon water ASTs, and one 10,000-gallon water AST.

According to Mr. Omps, two 10,000-gallon USTs were removed from the site in 1998 and the closure report documented soil sampling and analysis. During tank closure activities, an OCHCA official was present, and a total of three soil samples were taken from the two tank beds. Mr. Omps indicated that analysis of these samples revealed that total petroleum hydrocarbons (TPH) and benzene, toluene, ethyl benzene, and xylene (BTEX) levels were below laboratory detection limits. No staining, leaks, or spills were noted during the closure, and no groundwater was encountered. The OCHCA issued a No Further Action Letter. The USTs are listed as case closed by the OCHCA. Mr. Omps added that there are no vent or fill ports remaining onsite.

Mr. Omps stated that no floor drains are located in the maintenance shop building, pesticide or fertilizer storage sheds. However, floor drains are located in the restrooms within the office building, which were installed for drainage in the event of a water overflow. Mr. Omps stated that the drains are plumbed to the septic system.

When asked about hazardous materials, Mr. Omps stated that the materials used and stored on site include the following:

i. *Diesel Fuel*: stored in one 1,500-gallon AST located in the fueling area, adjacent to the shipping/receiving docks. Used to fuel farm equipment.
ii. *Motor Oil:* three 55-gallon drums (designated as a metal drum on the hazardous materials inventory) located inside the maintenance building, used in routine farm equipment and vehicle maintenance.
iii. *Hydraulic Oil*: one 55-gallon drum in the maintenance shop. Used in routine farm equipment and vehicle maintenance.
iv. *Grease*: one 55-gallon drum of cartridges in the maintenance shop. Used in routine farm equipment and vehicle maintenance.
v. *Ant-freeze:* 12 gallons in one gallon containers, used in routine farm equipment and vehicle maintenance. Stored in the maintenance shop on secondary containment.
vi. *Transmission Fluid:* one 55-gallon drum used in routine farm equipment and vehicle maintenance. Stored in the maintenance shop on secondary containment.
vii. *Parts Washing Unit*: one 30-gallon Safety Kleen aqueous parts washing unit stored in the maintenance shop building. Used in washing equipment and vehicle parts during repair.
viii. *Propane*: One 500 –gallon propane AST and nine 1,000-gallon ASTs located by the greenhouses. Used for heating the greenhouses.
ix. *Phosphoric Acid*: one 1500-gallon phosphoric acid AST stored in the fertilizer injector area. Used for irrigation water pH correction.
x. *Fertilizers*: (two) approximately 10,000-gallon AST stored in the fertilizer injector area. Used for fertilizing the fields.
xi. *Pesticides*: various chemicals used in the plant growing process. The pesticides are stored on painted wooden shelving within a designated, secured chemical storage area, to which access is limited.

According to Mr. Omps, the majority of chemicals stored at the site include herbicides, insecticides, fungicides, pesticides, growth regulators, and fertilizers. Fertilizers are pre-mixed with water and applied to plants by injecting the mix into the overhead irrigation systems in the greenhouses or to irrigation systems located throughout the fields. Mr. Omps stated that herbicides, pesticides, insecticides, fungicides and growth regulators are applied manually, on an as-needed basis, by site personnel trained and supervised by Managers licensed by the State of California Department of Agriculture.

When asked about previous assessments associated with the property, Mr. Omps stated indicated two previous reports have been completed for the property and that copies may be requested. The reports included:

- Phase I Environmental Site Assessment, dated June 2007, prepared by GaiaTech Incorporated, for the Real Property and Leased Premises located at San Juan Capistrano, California (Project No. A8116-620-1).

- Phase I Environmental Site Assessment, dated July 14 1997, prepared by GaiaTech Incorporated, for the Real Property and Leased Premises located at San Juan Capistrano, California (Project No. 3304-60).

Mr. Omps stated that was not aware of any asbestos surveys for the site. However, he stated that there is a potential ACM in the form of drywall/joint compound, vinyl floor tiles, and drop ceiling tiles in the office areas. Mr. Omps indicated that these materials are in good condition so the potential for exposure under normal operating conditions is low.

Mr. Omps stated that there are no noxious odors, hydraulic lifts, clarifier's, oil water separators, sumps, unlabeled drums, unidentified substance containers, spills, leaks, or stained soils, associated with the subject property. Mr. Omps also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

Cow Camp aka **Campo Vaquero - 31471 Ortega Highway**

Mr. Derik Knobel, Vice President, Ranch Operations, completed the interview regarding this property. Mr. Knobel stated that the property is currently occupied by rangeland, orchards, cropland, permanent pasture, farmstead, maintenance facilities, and appurtenant storage, tenant industrial and nursery operations. He stated that past uses of the orchard and nursery area were as rangeland and cropland. The irrigated pastures were cropland; the farmstead had more hay barns; the arena area and corrals was feedlot; and the shop area was hay storage, then a packing facility for vegetables. He stated that one 10,000-gallon diesel UST and one 500-gallon waste oil UST were removed from the property per County specifications in 2003. He noted that the tanks were replaced by today's 1,000-gallon ASTs. In addition, he noted that a 500-gallon gasoline UST was pulled near the corrals in the late 1980's; however, no records were available. Mr. Knobel stated that hazardous waste is generated on the property and manifests for disposal can be provided. He stated that he is aware of minor spills, and drips on the property, however, no major spills or releases have occurred. He also indicated that there is a single out of service hydraulic lift at the maintenance shop which will be drained of oil.

Mr. Knobel stated that there are no noxious odors, sumps, unlabeled drums, poly-chlorinated biphenyls (PCBs) (other than SDG transformers on poles) associated with the subject property. He also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property. In regards to asbestos containing materials (ACMs), and lead-based paint (LBP), Mr. Knobel indicated that they are potentially present in the onsite residences (circa 1955). He noted that buried asbestos concrete piping in service as irrigation water main crosses through the yards and pastures at the subject property.

Greenstone Materials - 31507 Ortega Highway

Mr. Rich Holt, on behalf of Greenstone Materials, and Mr. Gary Bale, on behalf of Redi-Mix completed the interview regarding this property. Mr. Holt and Mr. Bale stated that the property is currently used for concrete and asphalt recycling and a Redi-Mix concrete facility. They added that the property was used in the past for farming and was also an undeveloped field with no past use. They stated that only fuel and used oil ASTs are located on the property, which are contained/secured in concrete bays, designed and built to prevent spills or contamination. They noted that the only hazardous substances stored on site are used oil containers (in containment bays), and provided the pertinent Hazardous Waste Manifest information from All Valley Environmental. Mr. Holt and Mr. Bales stated that there are no noxious odors, hydraulic lifts, sumps, hazardous substances, unlabeled drums, poly-chlorinated biphenyls (PCBs), asbestos containing materials (ACMs), lead-based paint (LBP), stained soils, or environmental cleanups associated with the subject property. They also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

Catalina Pacific Concrete (CPC) - 31511 Ortega Highway

Ms. Julia Lakes-Martinez completed the interview on behalf of CPC. According to Ms. Lakes-Martinez, the property is currently occupied by a Concrete Ready-Mix plant and fueling facility, both of which have been inactive for the past three years. Related equipment and material storage is currently located on the property. The rear of the CPC parcel is occupied by a few sub-tenants, including Sierra Soils, a topsoil and composting producer.

Past use of the property was described by Ms. Lakes-Martinez as a Concrete Ready-mix plant, aggregate plant, vehicle maintenance and fueling, equipment and material storage and asphalt plant. Ms. Lakes-Martinez indicated that a permitted, single diesel UST and fuel island are located on the property however; they are not currently in use. She added that in 1986, a 10,000-gallon diesel UST located behind the batch office, and a 5,000-gallon gasoline UST were removed and replaced by the current UST. She noted that in 1989, underground asphalt tanks were also removed from the property. Ms. Lakes-Martinez added that there are no noxious odors, hydraulic lifts, sumps, hazardous substances, unlabeled drums, poly-chlorinated biphenyls (PCBs), asbestos containing materials (ACMs), lead-based paint (LBP), or stained soils at the subject property. She stated that all historic UST and AST removals included soil testing and approval by Orange County Public Health; and that no remediation was required after the soil testing. Ms. Lakes-Martinez also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

Olsen Pavingstone - 31511 Ortega Highway

Ms. Pernille Hjorth-Olsen on behalf of Olsen Pavingstone completed the interview regarding this property. Ms. Hjorth-Olsen stated that the property is used to manufacture interlocking concrete paving stones, and was used in the past as an equipment and storage site for a quarry facility (Calmat). Ms. Hjorth-Olsen stated that there is currently a single, fully approved/ permitted, double walled AST for diesel fuel storage at the facility. According to Ms. Hjorth-Olsen, the property also uses a sump pump, which is managed daily. She stated that waste substances generated on site are properly disposed of through Evergreen Environmental Services, documented by manifests. In response to an inquiry related to environmental cleanups at the property, Mr. White stated that in February 2011, there was a leak of concrete pigment at the Cemex facility located across the street and was carried by stormwater runoff into the Olsen Pavingstone, Inc. facility where the tinted stormwater settled into a previously excavated pit. The OCFA and the Orange County Public Works were notified and the appropriate clean-up procedures were implemented. A secondary containment area for add mixtures and pigments has since been built at the Cemex facility. Ms. Hjorth-Olsen was not aware of any noxious odors, unlabeled containers, unidentified substances, PCBs, ACM, LBP, chemical releases or environmental cleanups at the property. Ms. Hjorth-Olsen also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

Cemex - 31601 Ortega Highway

Mr. Jessie White on behalf of Cemex completed the interview regarding this property. Mr. White stated that the property is currently used as a Ready-Mix concrete plant, and that the past uses were unknown. Mr. White stated that there is currently a single 2.000-gallon diesel AST at the facility. He stated that used oil is stored on site. He also stated that there are also several ASTs used to store non-petroleum based concrete mixtures on the property. According to Mr. White, the property has a water settling system used to settle solids from the mixer truck washout. He added that the water is then reused in the process. He stated that used oil is stored on site. In response to an inquiry related to environmental cleanups at the property, Mr. White stated that in February 2011, there was a leak of concrete pigment at the facility. The OCFA and the Orange County Public Works were notified and the appropriate clean-up procedures were implemented. A secondary containment area for add mixtures and pigments has since been built at the facility. Mr. White was not aware of any noxious odors, unlabeled containers, or PCBs, ACM, or LBP, at the subject property. Mr. White also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

CR&R - 31641 Ortega Highway

Mr. Dean Rufdridge on behalf of CR&R completed the interview regarding this property. Mr. Rufdridge stated that the property is currently and has been used in the past as a truck terminal, operating facility with offices, maintenance, storage, recycling transfer building, a fuel island, C&D Material processing, storage, and composting operation. Mr. Rufdridge stated that past uses of the property have also included agriculture. Mr. Rufdridge stated that one AST for liquid natural gas, and one diesel UST, and one non-potable water UST are located on the property. He added that there is also, a clarifier connected to a yard drain, an auto pit sump, and a yard sump located on the property. Mr. Rufdridge stated that there are stored hydraulic fluid, anti-freeze, motor oil, and gear oil located on the property; all of which have hazardous waste manifests. Mr. Rufdridge added that there are no noxious odors, unlabeled containers, PCBs, stained soil, ACM, LBP, or environmental cleanups at the subject property. Mr. Rufdridge also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

O'Connell Landscape Maintenance - 31821 Ortega Highway

Mr. Darren Payne, on behalf of O'Connell Landscape Maintenance, completed the interview regarding this property. Mr. Payne stated that the property is currently occupied by a landscape maintenance yard, including parked vehicles, and equipment, plant material storage. Mr. Payne stated that there are no USTs/ASTs, noxious odors, hydraulic lifts, sumps, hazardous substances, unlabeled drums, poly-chlorinated biphenyls (PCBs), asbestos containing materials (ACMs), lead-based paint (LBP), stained soils, or environmental cleanups associated with the subject property. Mr. Payne also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

Ewles Materials - 32501 Ortega Highway

Mr. David Ewles completed the interview regarding this property. Mr. Ewles stated that the property is currently occupied by a concrete and asphalt recycling center. He added that he thought the property was formerly used for ConRock, and Industrial Asphalt plant and gravel pit. Mr. Ewles stated that there is a 1,000-gallon diesel AST located on the property. He added that there are no noxious odors, hydraulic lifts, sumps, hazardous substances, unlabeled drums, poly-chlorinated biphenyls (PCBs), asbestos containing materials (ACMs), lead-based paint (LBP), stained soils, or environmental cleanups associated with the subject property. Mr. Ewles also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

3.7 User Provided Information

Pursuant to ASTM E1527-05, EEI provided a Phase I ESA User Specific Questionnaire to the "user" (the person on whose behalf the Phase I ESA is being conducted), Mr. Sam Couch, Vice President of Planning and Entitlement with Rancho Mission Viejo. The User Specific Information provided by Mr. Couch is documented below. A list of the user specific questions (per ASTM E1527-05) with Mr. Couch's' associated responses is included in **Appendix F**.

3.7.1 Environmental Liens or Activity and Land Use Limitations

Mr. Couch stated that there are no identified environmental liens or activity and land limitations (AULs) on the subject property. To supplement this information, the client Mr. Couch provided EEI with a copy of a PTR for the subject property prepared by First American Title Company, dated December 1, 2014. A review of the PTR confirmed the absence of any environmental liens or and other AULs associated with the subject property.

3.7.2 Specialized Knowledge

Mr. Couch stated that RMV is the current developer of the subject property and represents the other private landowner interest in all transactions. According to Mr. Couch, user knowledge is limited to RMV operations including raising cattle/horses and citrus/avocado farming. Mr. Couch added that past uses of the PA 3 have been for agricultural, nursery and other lease uses for the past 120 years. Existing non-residential agricultural land uses include avocado and citrus production areas and barley fields. He added that chemicals related to Ranch operations include pesticides/herbicides, fertilizers, petroleum-related fuels and lubricants for ranch vehicles, and chemicals related to facility maintenance (paint, etc.)

3.7.3 Valuation Reduction for Environmental Issues

Mr. Couch stated that the relationship of the purchase price to the the fair market value on the property is not applicable in this case.

3.7.4 Presence or Likely Presence of Contamination

Mr. Couch stated that he was not aware of any obvious indicators that point to the presence or likely presence of contamination at the property.

3.7.5 Other

Mr. Couch stated that the reason the Phase I ESA is required is due to pre-development due diligence to satisfy County of Orange requirements. Mr. Couch noted that EEI has previously prepared site assessment reports for the subject property which have been provided under a separate cover.

3.8 Previous Assessments

EEI previously reviewed or conducted environmental site assessments for the subject property and several properties which are located on the subject property. The following is a brief summary of these reports:

3.8.1 EEI, Phase I ESA, Color Spot Nursery (31101 Ortega Highway), March 2000

In March 2000, EEI completed a Phase I ESA for **Color Spot Nursery**, located in the central portion of the subject property north of the Cow Camp area since approximately 1974. The property was described as a commercial nursery which included numerous small to medium sized structures, three lined ponds, an irrigation recovery system, and a water filtration/blending station. The site was not listed on any regulatory database as having an environmental concern or operating permit.

No indications of code violations, hazardous material spills, or other concerns were noted in the Fire Department files. EEI also reviewed files regarding the site with the Orange County Health Care Agency files (OCHCA), and noted that the site has been a hazardous waste generating facility since 1991. Two underground storage tanks (one diesel and one gasoline) were removed from the site in 1989, and no contamination was reported under the tanks. Only minor violations were noted in the OCHCA inspection reports. No items of concern were noted in the OCHCA files.

During the site visit, surficial oil spills were noted in the shop area, especially in the area of the waste oil AGT. Surface staining was noted in the dispensing areas around two 1,000-gallon AGTs (one diesel and one gasoline). No other evidence of environmental concern was observed at the property during the time of the assessment.

EEI recommended that the areas of surficial petroleum staining near the AGTs be investigated. EEI further noted that irrigation runoff observed leaving the site is considered a discharge, and that the site may be in violation of the Federal Clean Water Act and California Water Code.

3.8.2 EEI, Phase I ESA, C.O.W. Site - Colorspot Nursery, November 2001

In November 2001, EEI completed a Phase I ESA of the Cellular on Wheels (C.O.W.) Site, located near Color Spot Nursery. The site was described as currently containing two telecommunications tower and a small concrete structure, which apparently houses support equipment for the towers, and according to ranch personnel has been developed for approximately five years.

The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was noted during the site visit. EEI did not recommend any further action at the site.

3.8.3 EEI, Phase I ESA Olsen Pavingstone (31511 Ortega Highway), January 2002

In January 2002, EEI completed a Phase I ESA of the **Olsen Pavingstone Inc.** facility, located in the southeastern portion of the subject property since at least 1990. The site was described as a paving stone manufacturing plant, which includes several office trailers, a residential unit, shop area, and storage buildings. The site was not listed on any regulatory database as having an environmental concern or operating permit.

No indications of code violations, hazardous material spills, or other concerns were noted in the Fire Department files. The site was not identified by the OCHCA as having any operating permits, and no files were available regarding the site.

During the site visit, EEI noted the presence of hazardous material storage area, and a 1,000-gallon diesel AGT. No items of concern were noted, and EEI did not recommend any further investigation.

3.8.4 EEI, Phase I ESA, Cemex (31601 Ortega Highway), dated January 2002

In January 2002, EEI completed a Phase I ESA of the **Cemex** facility, located in the southeastern portion of the subject property since the mid 1990's. Prior to that, the site was occupied by a sand and gravel mining operation from at least the early-1960's to the early-1990's. The site was described as a concrete batch plant, including an office trailer, maintenance trailer, fueling island, truck washout area, and a storage shed. The site was not listed on any regulatory database as having an environmental concern or operating permit.

No indications of code violations, hazardous material spills, or other concerns were noted in the Fire Department files. No violations or items of environmental concern were noted in the OCHCA files. EEI also reviewed information regarding the site with the California Regional Water Quality Control Board. The site was identified as existing on a larger parcel, which reported a leaking underground fuel tank (LUFT) case in 1990. According to the information reviewed, a diesel release occurred, reportedly impacting the soil only, and the case was closed in 1991.

During the site visit, EEI noted the storage of oil drums, waste oil drums, lubricant containers, and admixture containers. With the exception of minor oil staining, no evidence of environmental concern was noted on the property. EEI recommended that hazardous substances storage and handling practices at the subject property be improved to prevent spills.

3.8.5 EEI, Phase I ESA, CR&R/Solag Disposal Company Inc. (31641 Ortega Highway), January 2002

In January 2002, EEI completed a Phase I ESA of the **CR&R/Solag Disposal Company Inc.** facility, located in the southeast portion of the subject property since approximately 1996. Prior to 1996, the site was occupied by an asphalt/cement batch plant from the early 1960's to 1990. The site was described as a waste management facility, including an office building, maintenance shop, fueling station, waste processing unit, and storage units. The site was not listed on any regulatory database as having an environmental concern or operating permit.

No indications of code violations, hazardous material spills, or other concerns were noted in Fire Department files. The site was identified as a hazardous waste generating facility with the OCHCA, and no violations were noted in the most recent inspection report reviewed by EEI.

During the site visit, EEI noted the presence of a hazardous material storage area, several clarifiers, and underground storage tanks. Minor oil staining was noted in the asphalt parking lot. No other evidence of environmental concern was noted during the site visit.

EEI recommended that, while no acute environmental concerns were noted during the ESA, site soil and groundwater sampling in and around the USTs, dispensers, and clarifiers should take place prior to the termination of the existing tenants lease. Several previous environmental assessment reports performed at the site were reviewed by EEI.

3.8.6 EEI, Phase I ESA, Ewles Materials (32501 Ortega Highway), dated January 2002

In January 2002, EEI completed a Phase I ESA for the **Ewles Materials** facility, located in the southeastern portion of the subject property since at least 1990. Prior to the 1990s, the site was vacant. The site was described as a manufacturing and processing plant, which includes an office trailer, employee trailer, storage unit, fuel compound, and washes station. The site was not listed on any regulatory database as having an environmental concern or operating permit, however, a former occupant of the site, **CalMat** was identified as having a closed LUFT case. This is the same LUFT case discussed in section 3.6.4.

The most recent fire department inspection report noted a house keeping violation and a permit related violation, with no specific details. The OCHCA identified the site as a hazardous materials generating facility, and no violations were noted on the most recent inspection report.

During the site visit, EEI noted the presence of a diesel AGT, an oil AGT, a waste oil AGT, several 55-gallon drums of lubricant, hazardous chemical storage, and minor petroleum hydrocarbon stained soil throughout the site. EEI recommended that, prior to the termination of the existing tenant's lease, sampling of near-surface soils in and around the crushing operation and maintenance area should be performed and the samples analyzed for petroleum hydrocarbons, heavy metals, and PAH's.

3.8.7 EEI, Phase I ESA, Catalina Pacific Concrete (31511 Ortega Highway), dated February 2002

In February 2002, EEI completed a Phase I ESA of the **Catalina Pacific Concrete (CPC)** facility, located in the southeast portion of the subject property since the 1990's. The site had been occupied by a sand and gravel mining operation from at least the early-1960's to the early-1990's. The majority of the site was occupied by a concrete batch plant, including a truck fueling facility, truck washout area, an office, a scale house, a maintenance shop, storage buildings, various sheds, and trailers. The eastern portion of the site was occupied by Saddleback Materials (office trailer, storage bin, and materials storage); Solag Disposal (Trash Bin Storage), Chuck Royce Trucking (equipment storage), and Laguna Asphalt Paving (equipment storage). According to a representative of CPC, Mrs. Tina Sentner, at the time of the report Laguna Asphalt Paving had been asked to vacate the property.

The site was identified on regulatory databases as holding a permit to operate underground storage tanks. A former occupant of the site, **CalMat**, was identified as having a closed LUFT case (discussed in section 3.6.4). No violations were reported in the Fire Department files. No violations were noted during the most recent OCHCA hazardous waste and underground storage tank site inspection. Soil samples collected during the removal of one 10,000-gallon diesel UST in 1986 reported minor concentrations of total hydrocarbons, and there was no evidence to indicate further action by OCHCA. Soil samples collected during the removal one 5,000-gallon gasoline UST and one 10,000-gallon diesel UST in 1990 reported minor levels of ethylbenzene, toluene, and xylenes, and elevated levels of gasoline range fuel hydrocarbons. However, no evidence to indicate further action by OCHCA was found in the file, and the site was given closure in 1991.

During the site visit, EEI noted the presence of hazardous chemicals, gas, oils, and solvents on the site. EEI recommended that, while no acute environmental concerns were noted during the ESA, site soil and groundwater sampling in and around the USTs, dispensers, and vehicle storage areas should take place prior to the termination of the existing tenants lease. EEI also recommended that the truck washout recycling pond and related chemicals should be dismantled and removed and the pond contents be removed and disposed of prior to termination of the existing tenant's lease, and that a licensed and certified asbestos and lead paint inspector should be contacted prior to demolition or remodeling of site structures. Several previous environmental assessment reports performed at the site were reviewed by EEI.

3.8.8 EEI, Phase I ESA, O'Connell Landscaping (31521 Ortega Highway), dated April 2002

In April 2002, EEI completed a Phase I ESA of the **O'Connell Landscaping** lease, located in the southern portion of the subject property since at least 1999. Prior to that, the site was predominantly vacant or used for storage. The site was described as a storage yard for O'Connell Landscaping, including several small portable storage structures. The site was not listed on any regulatory database as having an environmental concern or operating permit. There were no files regarding the subject property with either the Fire Department or the OCHCA.

During the site visit, EEI noted the presence of an un-permitted 100-gallon AGT (on a small concrete pad with no secondary containment), as well as waste oil containers, open 5-gallon oil containers, and a 55-gallon drum used for waste oil storage. Evidence of minor chemical storage, waste containers, improper chemical/waste storage and handling, and minor oil staining were noted during the visit.

EEI recommended that the use of the 100-gallon AGT be discontinued until a permit from the Fire Department is obtained; that the tenant contact the Fire Department and OCHCA regarding proper waste storage procedures, and possibly should register as a waste generating facility; and that petroleum-impacted soils noted during the site visit be removed and properly disposed.

3.8.9 EEI, Phase I ESA, St. Augustine Training Center (31151 Ortega Highway), dated July 2002

In July 2002, EEI completed a Phase I ESA of the **St. Augustine's Training Center**, a horse training facility which is no longer present on the subject property. The site was formerly located along Cow Camp Road, southwest of the present day Color Spot Nursery. The facility encompassed approximately one-half acre and included stables, two portable storage trailers, and two residential trailers. Prior to ~~this usage~~use as a horse training facility, the site was predominantly vacant, although it was farmed for a short period in the mid-1980's.

The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was noted during the site visit. EEI did not recommend any further action at the site.

3.8.10 EEI, Phase I ESA, Gobernadora Canyon (~~Planning Area 3~~PA3), dated May 1, 2003

In May 2003, EEI completed a Phase I ESA for the subject property (i.e. PA3). The property was described as approximately 2,300 acres and, identified by assessor's parcel numbers 125-161-03, 125-161-41, 125-161-44, and 125-161-45. The property was in its current configuration, the northern portion undeveloped and covered by thick vegetation, and the southern portion occupied by various commercial, industrial, and agricultural businesses, and a few residences. The site was occupied by the current occupants with the exception of St. Augustine's Horse Training facility and Cellular on Wheels, a mobile communications tower. Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, the following RECs in connection with the property were revealed:

- According to the interview with Mr. Fred Vorhees, Ranch Manager for over 30 years, at least one 500-gallon underground fuel tank was removed in the mid 1980's from the Cow Camp area. No information was available with the Orange County Health Care Agency regarding the tank removal, or any soil sampling performed. EEI recommended that the exact location of the former UST be identified, and that confirmation soil sampling be performed to determine if any contaminates exist in the tank pit area or in surrounding areas.

- According to Mr. Vorhees, the area east of the Cow Camp maintenance shop area (used to store equipment at that time) was historically used to bury old equipment and waste scraps. EEI recommended that the exact location of the buried debris be identified and excavated, and that soil sampling be performed to determine if any contaminates exist in the pit area or in surrounding areas.

- Two UST's are present at the Cow Camp maintenance shop. According to RMV personnel, these UST's were scheduled for removal. EEI recommended that the removal be conducted under appropriate regulatory guidance and the soil samples be collected to assess the possible presence of contamination.

- Surface stains indicating spillage of gasoline/diesel/motor oil were previously noted on the Color Spot Nursery and O'Connell Landscaping lease properties. EEI recommended that impacted soils be excavated, containerized, and disposed of in a permitted facility, and that verification sampling be conducted to verify removal.

- Minor oil stained pavement was previously noted at the Solag/CR&R, Cemex, and Ewles facilities during the site reconnaissance. However, there appeared to be no immediate threat to soil and/or groundwater beneath the subject property. EEI recommended that hazardous substances storage and handling practices at the subject property be improved to prevent spills.

- While no acute environmental concerns were noted within the Solag/CR&R, Ewles, and Catalina Pacific Concrete (CPC) ESAs, EEI recommended that site sampling take place prior to termination of the existing tenants lease. EEI recommended sampling soils and groundwater in and around any existing UST's, dispensers, clarifiers, crushing operations, and maintenance areas, with analysis for petroleum hydrocarbons, heavy metals, and PAH's.

- The truck washout recycling pond and related chemicals within the CPC lease area were recommended to be dismantled/removed and the pond contents removed/disposed of prior to termination of the existing tenants lease. EEI also recommended that all other chemicals related to the current site operations be removed from the property and properly disposed.

- A licensed/certified asbestos and lead paint inspector should be contacted prior to demolition or remodeling of all site structures built prior to 1980.

- The gasoline AST previously reported on the O'Connell Landscaping lease was installed without fire department review, inspection or permit. As such, the installation was illegal. Use of the tank should be discontinued, and the tank contents removed until a permitted facility can be installed. EEI recommended that the tenant contact OCFA and OCHCA regarding fuel storage requirements.

- Waste oil at the site was previously observed in open containers on bare ground on the O'Connell Landscaping lease. EEI recommended that the tenant contact OCFA and OCHCA regarding proper waste storage procedures (i.e. secondary containment), and register as a waste generating facility.

- Evidence of past agricultural use had been revealed. If residential or other potentially health-sensitive uses were to be contemplated (e.g., schools, child care facilities, etc.), EEI recommended that an investigation be conducted to assess the possible presence of residual pesticides in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils dated June 28, 2000.

3.8.11 EEI, Results of Limited Phase II Investigation, Former Burial Site, Ranch Plan, ~~Planning Area 3~~PA3, dated November 12, 2014

The purpose of the above referenced investigation was to assess the possible presence of and the potential impacts associated with a suspected burial site located in the eastern portion of the Cow Camp storage yard. In July 2014, EEI conducted a geophysical survey to map the suspected burial area followed by soil matrix and soil vapor sampling in August 2014 to assess the extent of potential subsurface impacts of petroleum hydrocarbons and/or chemicals of concern. Based on the results of the investigation, EEI provided the following conclusions and recommendations:

- Geophysical anomalies indicating the presence of buried metallic and mon-metallic debris was noted in several locations within the suspected burial site. The maximum depth of burial ranged from 10 to 15 feet bgs.

- TPH of the diesel and motor oil ranges exceeded their respective ESL values in one sample (GP-1) collected from the area labeled as anomaly 1. If targeted soil mitigation takes place, EEI recommended that confirmation samples be collected post excavation to verify removal of petroleum hydrocarbon impacted soils exceeding ESL residential values.

- Soil vapor concentrations of xylenes exceeded the Office of Environmental Health Hazard Assessment (OEHHA) threshold for residential exposure in three areas sampled. The widespread distribution suggested that the limits of the vapor plume exceed the specific areas identified. Due to the elevated levels of xylenes in soil gas, which exceed published OEHHA values for residential use,

future development of the property should incorporate design elements to protect site occupants from possible xylenes inhalation exposure. These measures could include remedial excavation of the impacted areas or such engineering controls as sub slab vapor barriers or modifications to forced air ventilation system designs to increase building air exchanges and/or pressures.

3.8.12 EEI, Results of Soil Vapor Sampling, Existing and Former UST Locations, Campo Vaquero, Cow Camp Shop, Color Spot Nursery, CPC, and CR&R/Solag, Ranch Plan – ~~Planning Area 3~~PA3, dated November 12, 2014

The above referenced investigation summarized a series of soil vapor surveys conducted on existing and former UST locations in ~~Planning Area 3~~PA3, in an effort to identify potential subsurface vapor contamination that may impact future site development in the areas identified. The specific sites investigated included former UST locations at Cow Camp (including Campo Vaquero and Shop) and, Color Spot Nursery, as well as existing UST locations at Catalina Pacific Concrete (CPC) and CR&R/Solag.

The soil gas sampling at Campo Vaquero and Cow Camp Shop consisted of advancing 10 probes. Vapor probes V-1 through V-5 were positioned in the vicinity of the former diesel UST location adjacent to the shop building, and probes V-6 through V-10 were located within the perimeter of the former gasoline UST cavity adjacent to the corrals at Campo Vaquero. The Soil Matrix Sampling portion of the investigation consisted of advancing one boring (GB-1) adjacent to the former hydraulic hoist, west of the vehicle maintenance shop.

In addition, EEI conducted Soil Gas Sampling at CR&R/Solag, CPC, and Color Spot Nursery (aka Lease Sites) consisting of the installation and sampling of eight soil vapor probes at targeted locations beneath the subject lease properties. No soil samples were collected as part of this limited assessment. The specific locations targeted were as follows: VP1, VP2, VP3, VP4 – adjacent to existing gasoline and diesel USTs at CR&R/Solag, 31641Ortega Highway; VP5, VP6 – adjacent to an existing diesel UST at Cal Portland Cement, 31511 Ortega Highway; and VP7, VP8 – at the former gasoline UST and adjacent to the existing gasoline AST at Color Spot Nursery, 31101 Ortega Highway.

Soil gas samples submitted for laboratory testing were analyzed for Volatile Organic Compounds (VOCs) by United States Environmental Protection Agency (USEPA) Test Method TO-15. Soil matrix samples submitted for laboratory testing were analyzed for Total Petroleum Hydrocarbons (TPH) by USEPA Test Method 8015M and for Polychlorinated Biphenyls (PCB's) by EPA Test Method 8082.

The following bulleted items summarized significant findings from the analytical testing of the soil gas sampling at Campo Vaquero and Cow Camp Shop:

- Eleven TO-15 analytes were reported at concentrations exceeding the laboratory detection limits. The analytes included: acetone, benzene, toluene, ethylbenzene, xylenes, 2-butanone, heptane, isopropanol, propylene, tetrachloroethylene, and 2, 2, 4-trimethylpentane.

- The only analytes exceeding OEHHA values were ethylbenzene and xylenes. Ethylbenzene exceeded the OEHHA screening level of 420 micrograms per cubic meter ($\mu g/m^{3)}$ in four samples and xylenes exceeded the screening level of 320,000 $\mu g/m^3$ in one sample.

- Sample V-1 contained ethylbenzene at a concentration of 19,000 $\mu g/m^3$, sample V-2 at 3100 µg/m3, sample V-4 at 3500 µg/m3, and sample V-10 at 770 $\mu g/m^3$.

- Sample V-1 also contained xylenes at a concentration of 470,000 $\mu g/m^3$.

- No other VOCs were reported at concentrations exceeding OEHHA values.

EEI compared the reported soil gas analyte concentrations to OEHHA reference values for soil gas - residential scenario; OEHHA values are concentrations of select hazardous chemicals against which site specific laboratory values are compared to estimate human health risk. Of the 11 reported analytes, only ethylbenzene and xylenes exceeded OEHHA values. Both analytes occurred in the immediate proximity of the former diesel UST and indicated that this is a likely source. Ethylbenzene also was detected south of the vehicle maintenance shop at a distance far enough from the former diesel UST to indicate a source other than the former diesel tank. Acetone was reported in each sample; however, the presence of acetone is not characteristic of historic site usage but rather a common artifact from the analytical laboratory. EEI had no reason to suspect that acetone is pervasive across the site. The reported acetone concentrations ranged from 20 to 18,000 µg/m^3. The report stated that there is no OEHHA value assigned to acetone.

The soil matrix sampling results from the Campo Vaquero and Cow Camp Shop laboratory analytical testing, indicated that no TPH within the range of C6 to C44 was reported in either sample analyzed; and no PCBs were detected.

In regards to the soil gas sampling results at the CR&R, CPC, and Color Spot Nursery, the following bulleted items summarized notable findings:

- Nine TO-15 analytes were reported at concentrations exceeding the laboratory detection limits. The analytes included: acetone, toluene, xylenes, 2-butanone, heptane, n-hexane, propylene, tetrachloroethylene, and 1,2,4-trimethylbenzene.

- None of the analytes exceeded OEHHA or ESL standards;

Acetone was reported in each sample; however, as noted above, it is commonly an artifact from the analytical laboratory rather than a site specific contaminant, and EEI had no reason to suspect that acetone is pervasive across the site. The reported acetone concentrations ranged from 69 to 230 µg/m^3. The ESL value for acetone is 15,000,000 µg/m^3.

In conclusion, EEI stated that in regards to Cow Camp, the four samples (V-1, V-2, V-4, V-10) containing ethylbenzene at concentrations exceeding the OEHHA value of 420 µg/m^{3}and the single sample (V-1) containing xylenes at concentrations exceeding the OEHHA value of 320,000 µg/m^3 indicated that residential construction at these locations cannot proceed unimpeded. Therefore, additional investigation appeared to be warranted at such time that future site development activities were being contemplated in the vicinity of the Cow Camp Shop and Camp Vaquero UST Locations.

In regards to the Lease Sites, as none of the VOC soil gas values exceeded their respective residential screening levels, no further investigation appeared to be warranted at the CR&R/Solag, CPC, or Color Spot Nursery UST locations. However, EEI recommended that future UST removal activity at CR&R/Solag and CPC be monitored to assess any possible contamination issues.

3.9 Other Environmental Issues

3.9.1 Asbestos-Containing Materials

Asbestos, a natural fiber used in the manufacturing of a number of different building materials, has been identified as a human carcinogen. Most friable (i.e., easily broken or crushed) Asbestos-Containing Materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. These materials, however, were not banned completely.

An ACM survey was not conducted at the subject property as part of this Phase I ESA. No ACM was noted in existing structures during the site reconnaissance. However, according to the information reviewed, structures on the subject property were built prior to 1978. Therefore, the presence of asbestos-containing materials is likely. EEI recommends ACM testing of building materials prior to improvements or demolition activities.

3.9.2 Lead-Based Paint

Lead-Based Paint has been identified by Occupational Safety and Health Administration (OSHA), the United States Environmental Protection Agency (U.S. EPA) and the Department of Housing and Urban Development (HUD) as being a potential health risk to humans, particularly children, based on its effects to the central nervous system, kidneys, and bloodstream. The risk of Lead-Based Paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950;
- a severe risk is present from paint applied before 1960;
- a moderate risk is present from paint applied before 1970;
- a slight risk is present from paint applied before 1977; and
- paint applied after 1977 is not expected to contain lead.

According to the information reviewed, structures on the subject property were built prior to or during 1978. Therefore, the presence of lead based paint is likely. Although this is not considered a recognized environmental condition (REC), a hazardous materials survey is recommended prior to demolition onsite.

3.9.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. The U.S. EPA recommends that homeowners in areas with radon screening levels greater than 4 Picocurries per liter (pCi/L) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed the U.S. EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. U.S. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; and soil permeability, the U.S. EPA has identified the County of Orange as Zone 3 (i.e., a predicted average indoor radon screening level than 2 pCi/L). EEI does not consider radon as a significant environmental concern at this time.

3.9.4 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCB's) are used in electrical equipment, particularly in capacitors and transformers, because they are electrically nonconductive and stable at high temperatures. PCB's persist in the environment, accumulate in organisms, and concentrate in the food chain. The disposal of these compounds is regulated under the Toxic Substances Control Act, which banned the manufacture and distribution of PCB's. By Federal definition, PCB equipment contains 500 parts per million (ppm) or more of PCB's, where PCB-contaminated equipment contains PCB concentrations greater than 50 ppm but less than 500 ppm. The US Environmental Protection Agency (EPA), under TSCA guidance, regulates the removal and disposal of all sources of PCB's containing 50 ppm or more.

Any electrical equipment containing dielectric insulating fluids or coolants, manufactured prior to 1976, should be considered as potentially PCB-containing. This includes transformers, capacitors, and fluorescent light fittings. In addition, PCB's may also be found as a stabilizer in older lubricating oils, pesticide extenders, cutting oils, hydraulic fluids, paints, sealants, and flame retardants (UNEP, 1999). The management of potential PCB-containing transformers is the responsibility of the local utility or the transformer owner. Actual material samples need to be collected to determine if transformers are PCB-containing.

According to the information reviewed, structures on the subject property were built prior to 1976. Therefore, the presence of PCB-containing equipment is likely. Although this is not considered a REC, a hazardous materials survey is recommended prior to demolition onsite.

4.0 SITE RECONNAISSANCE

4.1 Purpose

The purpose of our site reconnaissance was to physically observe the subject site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures on the subject site, or into soil and/or groundwater beneath the subject property. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon surface staining, waste drums, USTs, ASTs, illegal dumping, or improper waste storage/handling. Detailed information pertaining to our site reconnaissance is provided in the text below.

4.2 Subject Property

EEI had previously conducted site reconnaissance's of the subject property and most of the individual lease sites in 2004, and periodically over the last decade as part of due diligence for ongoing RMV operations. The most recent site reconnaissance on November 5, 2014, included the majority of accessible subject property locations including the eastern margin of Gobernadora Creek, the northern margins of San Juan Creek, the extent of citrus/avocado orchards in the southeastern portion, the Cow Camp area, Color Spot Nursery, and the industrial lease sites. Visual conditions observed during our reconnaissance of the subject property are documented in a Photographic Log (**Appendix G**), and summarized in **Table 3**.

The subject property (i.e., ~~Planning Area 3~~PA3) is located in and adjacent to Gobernadora Canyon. Gobernadora Creek flows in a southerly direction through the western portion of the subject property, to its confluence with San Juan Creek. San Juan Creek, which is the principal physiographic feature in the area, borders the subject property to the south and southeast, and separates the subject property from Planning Area 4, located to the southeast. The northern and northeastern portions of the subject property are bordered by undeveloped hillside.

Portions of the subject property have been used for agricultural, nursery and other lease uses for over 100 years. Existing agricultural land uses include avocado and citrus production areas in the southeastern portions and barley fields in the southern portions. Barley production had also historically taken place in the western portion of the subject property, along Gobernadora Creek. The Gobernadora Ecological Restoration Area (GERA) is located within the PA3 open space adjacent to and to the west of the subject property.

Color Spot Nursery is located in the central portion of the subject property, with several industrial/commercial lease properties located in the southeastern portion, including Greenstone Materials, O'Connell Landscape Maintenance, Catalina Pacific Concrete (CPC) Cemex, CR&R/Solag Disposal Company, Ewles Materials, and Olsen Pavingstone. Along the southern boundary of the subject property is an area known historically as Cow Camp. Existing uses in this area include homes for ranch employees, ranch offices, a horse riding arena, pastures and stock yards, tack room, shop, and equipment storage area.

There are paved and unpaved ranch roads located within the subject property. The principal paved roads include Cow Camp Road, which traverses the southern portion of the property from east to west, and the unnamed access roads which connect Cow Camp and the industrial leases in the southeast to Ortega Highway. The unpaved road network extends throughout the subject property, including along Gobernadora Canyon and adjacent hills to the east, throughout Color Spot Nursery and the agricultural properties to the southeast, and along the northern margins of San Juan Creek.

Color Spot Nursery - 31101 Ortega Highway

The Color Spot Nursery facility utilizes nearly all of the subject property for propagating, growing, maintaining, packing, and shipping potted flowering plants and containerized shrubs. This includes over 300 separate growing areas, over a dozen greenhouses (located primarily in the southeastern portion of the facility), a canning facility (located in the western portion of the facility), two fresh water reservoirs, and an irrigation recovery/recycling system. One of the fresh water reservoirs (i.e., upper reservoir) is located in the northern terrace, and services the irrigation needs for that portion of the facility. The second reservoir (i.e., lower reservoir), is located immediately east of the driveway linking the southern and northern terraces, and is used as an emergency water supply.

The irrigation recovery system collects irrigation water from several low-lying areas of the site, and pumps the water into a collection pond (located near the entrance to the facility). This water is then pumped through a series of filters and blended with fresh water from the facilities well (located offsite to the south) for reuse. Liquid fertilizer, stored in several large aboveground tanks, is injected into the irrigation water at several locations throughout the site. The recovery system was observed on three occasions during the site reconnaissance.

A central compound, located at the northern end of the driveway, contains an office/administration building, loading dock, maintenance shop, chemical storage building, and several small storage sheds. Hazardous substances/waste were noted in and around the maintenance shop and chemical storage areas, including pesticides, herbicides, fertilizers, new and used oil, diesel, gasoline, solvents, paint, and vehicle batteries. Overall housekeeping was good, and storage containers appeared properly labeled and in good condition. However, several small surface spills of oil were noted in both paved and unpaved portions of the shop, including the area around the aboveground waste oil tank.

Three aboveground fuel storage tanks were noted in the fueling area along the driveway south of the central compound. These include one diesel and one gasoline storage tank, both enclosed within secondary containment structures, and no leaks were observed. A third, portable fuel AST of undetermined contents was also noted in the fueling area. While the dispensing area around the tanks is unpaved, and there was no evidence of surface staining noted.

The roadway along the eastern margin of the site is apparently used as a storage area for abandoned and/or discarded equipment. Trailers, pipe, clay roof tiles, wooden lath, and various wooden pots, pallets, and debris were noted.

With the exception of the items mentioned above, no evidence of ~~evidence of~~ contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

Catalina Pacific Concrete (CPC) - 31511 Ortega Highway

The western portion of the facility is occupied by a ready mix concrete plant and support structures for the day to day operations of the plant. These include: an office, a scale house, a scale, a truck washout area, several storage units, a concrete ad-mixture container storage area, a fuel island and the associated diesel UST. The ad-mixture containers were all stored in concrete lined secondary containment areas. The eastern and northern portions of the site are occupied by areas leased to various tenants, and include office and storage trailers, bin storage, and soil amendments (Sierra Soils). Chemical storage was noted in the ad-mixture storage area. A pad mounted transformer was noted in the northwestern portion of the property. With the exception of the above, no evidence of ~~evidence of~~ contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

Olsen Pavingstone - 31511 Ortega Highway

The majority of the property is used for storage of manufactured paving stones. The central portion of the facility contains two office/administration buildings, a paving stone manufacturing plant, a cooling awning, a maintenance shed, three sand hoppers, several conveyors, storage sheds, and two residences. A storage shed was noted along the eastern margin in the northeast portion of the site. Storage of hazardous substances (i.e. waste oil, new oil, used oil filters, dyes, household solvents and cleaners) was noted in the paving stone manufacturing plant, east of the paving stone manufacturing plant and in the maintenance shed. A 1,000-gallon diesel fuel AST, with secondary containment, was noted in the northeast portion of the property, near the parking area and propane tank. A smaller (500-gallon?) above diesel fuel AST was noted in near the entrance driveway along the northern portion of the property. Overall housekeeping was good, and storage containers appeared properly labeled and in good condition. With the exception of the above, no evidence ~~of evidence~~ of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

Cemex - 31601 Ortega Highway

The property is currently occupied by a ready mic concrete plant, aggregate, and support structures for the day to day operations of the plant. These include: an office, a concrete ad-mixture storage area, a truck washout area, three storage/maintenance units, and a 2,000-gallon, above-ground diesel storage tank. Storage of oil drums, waste oil drums, lubricant containers, was noted in the eastern portion of the property. Storage of ad-mixture containers was noted in the western portion of the property. Storage of these materials is in concrete lined secondary containment areas. In addition, a pad mounted transformer was noted in the eastern portion of the property, north of the office trailer. Stained pavement was noted outside the secondary containment area located in the eastern portion of the property. With the exception of the above, no evidence ~~of evidence~~ of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

Two pole-mounted transformers were noted to the east of the paving stone manufacturing plant. According to San Diego Gas and Electric Personnel, it is highly unlikely that the transformers serving the facility contain polychlorinated biphenyl (PCB's) at concentration levels requiring special management under the Environmental Protection Agency's rules.

With the exception of the items mentioned above, no evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

Solag/CR&R - 31641 Ortega Highway

The western portion of the property is occupied by a truck terminal and operating facility, including offices, parts storage, vehicle repair and maintenance, equipment storage areas and a paint booth. A recyclable materials transfer station is located in the northern portion of the property. Two diesel UST's, a fuel island and associate piping are located to the north-northwest of the transfer station. An above ground liquefied natural gas storage tank and dispensing facility were noted to the south of the fuel islands. A truck scale is located in the eastern portion of the property, to the southeast of the transfer station.

Storage of hazardous materials (motor oil, gear oil, hydraulic oil, antifreeze) was noted between the vehicle repair facility and the tire maintenance facility, in the vehicle maintenance facility, and in several storage containers located along the northern margin of the property. Storage of compressed gas cylinders was noted on the western side of the transfer station. In addition, a clarifier and sumps were noted on the property. A recyclable waste material processing facility and composting area are located in the eastern portion of the property. Minor oil staining was noted in the asphalt parking area.

With the exception of the above, no evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

O'Connell Landscape Maintenance - 31821 Ortega Highway

The subject site is an unpaved storage lot, located along an access road north of San Juan Creek and Ortega Highway. The property encompasses approximately one-half (0.5) acre, and includes a fenced storage yard, office trailer, and small wooden storage shed. It is bounded by a commercial nursery to the north and west, a residential unit to the east, and agricultural land to the south. The site is currently being used as a storage yard and field office for O'Connell Landscaping. The fenced yard contains several roll-off storage trailers containing various equipment and supplies, including small containers of oil and gasoline, leaf blowers, and lawn mowers. Also in the yard are a service vehicle, a portable water tank and sprayer, and various pipes and fittings. Waste oil containers were noted along the northern margin of the property, adjacent to a storage trailer. A single 55-gallon drum, used for waste oil storage, was noted along the western margin for the yard (near the AGT).

A small storage shed containing parts was noted just south of the yard, and an office trailer was present in the southeast corner of the property. The western portion of the property is used for storage of bulk mulch products and soil amendments.

EEI personnel walked the perimeter of the site, and then traversed the site from east to west and north to south, visually observing the physical features of the site. Evidence of minor chemical storage (gas and oil), waste containers (waste oil), was noted during the site reconnaissance.

With the exception of minor petroleum hydrocarbon stained soil, no evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

Ewles Materials - 32501 Ortega Highway

The property is a concrete and asphalt recycling center, and is currently occupied by an office/scale house trailer, an employee lounge trailer, a processing plant operations trailer, a materials processing plant, storage sheds and hazardous materials storage areas. A 1,000-gallon above-ground diesel storage tank, an above-ground oil storage tank, an above ground waste oil storage tank, and several 55-gallon drums of lubricant were noted in the northwestern portion of the property (fuel compound). Storage of hazardous chemicals was also noted in the storage shed located in the fuel compound. Storage of compressed gas was noted in an enclosed area located just north of the processing plant operations trailer. Minor petroleum hydrocarbon stained soil was noted in the fuel compound, in areas of heavy equipment storage, and beneath the southern light generator. With the exception of minor petroleum hydrocarbon stained soil, no evidence ~~of evidence~~ of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

A power pole mounted transformer and a pad mounted were noted to the east of the fuel compound. According to San Diego Gas and Electric Personnel, it is highly unlikely that the transformers serving the facility contain polychlorinated biphenyl (PCB's) at concentration levels requiring special management under the Environmental Protection Agency's rules.

Cow Camp aka **Campo Vaquero - 31471 Ortega Highway**

Cow camp includes residences, barns, a maintenance area, pastures, corrals, and irrigated cropland. San Juan Creek Haul Road traverses Cow Camp from west to East, and the access road from Ortega Highway traverses the site from north to south. In the eastern portion of Cow Camp (east of the access road), EEI noted one portable office, a two warehouses one maintenance shop, a storage yard, two fueling stations, a heavy equipment storage area, three portable storage units, a covered storage shed, and an irrigated pasture. In the southwestern portion (west of the access road and south of San Juan Creek Haul Road), EEI noted two roping arenas, several corrals and cattle processing equipment, three barns, irrigated pastures, a few open fields, and ten residential structures. North of San Juan Creek Haul Road, along the ridge, EEI noted five residences. Three water wells were noted on the property, along the access road from Ortega Highway and along San Juan Creek.

In the Cow Camp maintenance area, the following chemical storage was noted in and around the shop area: approximately 20, 55 gallon drums labeled antifreeze, motor oil, hydraulic fluid, tractor/cat oil, motor oil, waste coolant, , waste mixtures, and several 5-gallon buckets of motor oil and hydraulic oil; used/new tire storage; one 1,000-gallon concrete vaulted diesel above ground tank (AGT); one 1,000-gallon concrete vaulted gasoline AGT, one steel 500-gallon dyed diesel gallon leased tank, AGT;275-gallon mini bulk AGT labeled "omni oil 6E" ;. Inside Shop are Two 200- gallon AGT's one for used coolant, one for waste oil, and a 200 gal three compartment AGT storing motor oil. EEI noted oil-stained concrete in and around the shop areas. Three portable storage units were noted in the northern portion of the site. According to Mr. Derek Knobel, Ranch Manager, two storage units contain mechanical parts, and the other contains various pesticides and fertilizers. According to Mr. Knobel, equipment washing is done at the southern edge of the maintenance shop area, and the run-off drains to the field that lies just south of the shop area.

No other evidence of ~~evidence of~~ contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

Greenstone Materials - 31507 Ortega Highway

The property is a concrete and asphalt processing/recycling facility and ready mix concrete plant. It is currently occupied by an office/scale house trailer, a portable ready mix plant, materials processing plant, storage sheds and hazardous materials storage areas. A 2,000-gallon above-ground diesel storage tank, and an above ground waste oil storage tank, was noted in the eastern portions of the site. No other chemical storage was observed. Large piles of concrete and asphalt debris were noted in the central portion of the facility, with a large pile of crushed (processed) aggregate located in the western portion. No other evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

TABLE 3
Summary of Site Reconnaissance

Item	Concerns	Comments
General Housekeeping	No	Facilities appears well maintained and in moderate to good condition.
Surface Spills	No	Minor spillage observed in several locations.
Stained Surfaces	No	Minor staining observed in several locations
Fill Materials	No	None observed.
Pits/Ponds/Lagoons	No	Surface retention and/or storage ponds noted at Color Spot Nursery, Olson Pavingstone, CPC, and Cemex.
Surface Impoundments	No	None observed, except as noted able.
ASTs/USTs	No	UST's observed at CPC and CR&R. AST's observed at Cow Camp Shop area, Color Spot Nursery, CR&R, Olson Pavingstone, Cemex, Ewles Materials, Greenstone,
Distressed Vegetation	No	None observed.
Wetlands	No	South of property, in and around San Juan Creek
Electrical Substations	No	None observed.
Areas of Dumping	No	None observed.
Transformers	No	Several pole-mounted transformers located along Ortega Highway and on roadways leading to industrial leases in southeast portion of subject property.
Waste/Scrap Storage	No	Equipment bone yard noted along tree line on western portion of Tree of Life lease property.
Chemical Use/Storage	No	Consistent with facility usage. Chemicals appeared properly labeled and stored.

4.3 Adjacent Properties

EEI conducted a visual and auto reconnaissance of the adjoining neighborhoods (to the extent practical) to evaluate the potential for offsite impacts that may affect the subject property. These would include evidence of chemical storage or usage, surface staining or leakage, distressed vegetation, or evidence of illegal dumping.

The property is immediately bounded by undeveloped land to the north, San Juan Creek to the south, and undeveloped land (~~Caspar's~~Caspers Regional Park) to the east and west (GERA). The subject property is located in southeastern Orange County, approximately three miles east of San Juan Capistrano.

The adjacent and nearby sites located within a one-eighth mile radius of the subject property, listed as release sites and/or sites of potential concern were discussed above in Section 3.3 *Regulatory Database Search* and are not repeated here.

5.0 VAPOR ENCROACHMENT SCREEN

ASTM Standard E2600-10 Standard Guide for Vapor Encroachment Screening (VES) on property Involved in Real Estate Transactions was used as guidance for conducting a VES for the subject property. The purpose of the screening is to determine whether a Vapor Encroachment Condition (VEC) exists from chemicals of concern (COC) that may migrate as vapors onto a property as a result of contaminated soil and groundwater on or near the subject property. The screening involves a two tiered approach to assessing VEC risk as described below.

The VES process includes a review of site conditions (e.g., aerial photographs, city directories, and environmental database information), which is information typically collected during a Phase I ESA, user provided information, and in some instances the use of a third-party vapor encroachment application. The following sections describe the VES performed on the subject property.

5.1 Site Conditions

The subject property is located along the eastern flank of Chiquita Canyon, east of the gently sloping alluvial valley formed by Chiquita Creek, and north of San Juan Creek. Site elevations range from approximately 400 feet above mean sea level (amsl) along the southeastern margin of the subject property, to over 560 feet amsl along the northwestern margins. The topographic gradient in the site vicinity is to the southwest at approximately 0.14 feet per foot. Surface drainage from the site flows either west into Chiquita Creek or south to San Juan Creek, and eventually into the Pacific Ocean, approximately nine miles to the southwest.

Soil in the vicinity of the site has been identified by the USDA - NRCS as belonging to Cieneba and Myford associations. Soils in the Cieneba associations are typically found on gently sloping to moderately sloping alluvial fans and consist mainly of well-drained clays and sandy loams. These soils have a moderately slow to moderately rapid permeability, medium runoff, and the erosional hazard is moderate. Soils in the Myford association are found on marine terraces and consist mainly of sandy loams. This soil type is very slowly permeable, runoff is medium to rapid, and the erosional hazard is moderate.

According to the San Diego Regional Water Quality Control Board - Region 9 (SDRWQCB, 1994), the site lies within the Gobernadora Hydrologic Subarea of the San Juan Hydrologic Unit. The Gobernadora Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (south of the site), Cañada Chiquita Creek (west of the site), and Cañada Gobernadora Creek (east of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet bgs.

5.2 User Provided Information

To assist EEI in the completion of the VES, Mr. Sam Couch, with RMV, completed a Vapor Encroachment Screen - User Questionnaire (**Appendix H**). The questionnaire provided basic information regarding the use, condition, and proposed development of the subject property.

According to Mr. Couch, buildings are proposed to be constructed on the property and the type of construction is pending. According to Mr. Couch he does not know of any reported instances of gas stations, cleaners, odors, chemicals, or health concerns reported on the property; however, there are existing ASTs/USTs. He added that there will be sensitive receptors (i.e. children, elderly people) that will occupy the property.

5.3 Tier 1 Screening – Search Distance Test/Chemicals of Concern

A Tier 1 Screening includes the search distance test that involves a review of the regulatory database report and available historical records obtained during the Phase I ESA process to make a determination if any *known or suspect potentially contaminated* properties exist within the Area of Concern (AOC). High risk sites are typically current and former gas stations, former and current dry cleaners, manufactured gas plants, and industrial sites (Brownfields). The AOC is defined as any up gradient sites within the ASTM E1527-13 standard search distances and any cross or down gradient sites within 1/3 mile for solvents and petroleum products.

If the contamination at the known or potentially contaminated sites within the AOC consists of Chemicals of Concern (COCs), then a potential Vapor Encroachment Condition (pVEC) exists, and a Tier 2 Screening evaluation is recommended. If no known or potentially contaminated sites with COCs exist within the AOC, no further inquiry is necessary.

Based on the results of a Tier 1 evaluation, EEI concluded that a potential Vapor Encroachment Condition (pVEC) for the subject property cannot be ruled out, due to the presence of existing or former fuel UST's at the Cow Camp shop, Campo Vaquero UST site, CPC, Color Spot Nursery, and CR&R/Solag. EEI recommended invasive testing at those locations, which was performed in March and May 2014 and summarized in section **3.8.12.**

6.0 LIMITED AGRICULTURAL CHEMICAL SURVEY

The subject property has been and continues to be utilized for agricultural purposes including a nursery, produce fields, citrus groves, and grazing land. It is likely that restricted agricultural chemicals were applied to subject property soils, which is a potential REC. Based on the future planned property use (residential), additional investigation efforts (i.e., soil sampling and analysis) were performed by EEI to further evaluate subject property soils for agricultural chemicals.

There is no specific guidance regarding the testing and analysis of residual pesticides in near-surface soils at proposed residential development sites in Orange County. Therefore, EEI relied principally on the Department of Toxic Substance Control's (DTSC) August 2008 "Interim Guidance For Sampling Agricultural Properties", combined with our experience gathered over the last two decades.

The DTSC document provides guidance for sampling of former agricultural properties (undisturbed) where pesticides and/or fertilizers were presumably applied uniformly, for agricultural purposes, consistent with normal application practices. The DTSC document was initially prepared for use in evaluating soil at proposed new school sites and existing schools undergoing expansion projects where the property was currently or previously used for agricultural activities, but has been expanded to provide a uniform and streamlined approach for evaluating agricultural properties.

Based on the size and configuration of the property, and EEI's experience at similar sites, a total of 113 discrete soil samples were collected at near-surface (0.5 to 2-feet below grade) locations on the subject property. The following sections discuss our investigation activities

6.1 Field Investigation

The sampling program was executed as three separate events with the initial event generating 35 samples, the second event 44 samples, and the final event 34 samples. Each of the sampling events used identical protocol, namely a hand auger to obtain soil samples at depths of approximately 0.5 feet and 2 feet below ground surface (bgs). Sample material was extracted from the ground and placed into laboratory-supplied, 4-ounce glass jars. Each jar was sealed with a Teflon-lined cap and labeled with a number unique to the sample. The samples were placed in a chilled cooler and subsequently delivered via courier to American Analytics, a California State-certified laboratory, under Chain-of-Custody documentation.

On February 19, 2014, EEI personnel mobilized to the subject property to conduct the initial soil sampling event. Soil sampling locations were selected with the goal of collecting representative samples from the area being investigated (**Figure 4**). A total of 18 discrete locations, generating 35 samples identified as P3-1 through P3-18, were collected. The areas targeted were the citrus groves.

On February 26, 2014, EEI personnel remobilized to the subject property to conduct additional soil samples (**Figure 4**). A total of 22 discrete locations, generating 44 samples identified as P3-19 through P3-40**,** were collected. The areas targeted included the Lower Gobenadora Pasture, (samples P3-19 through P3-29), the Cow Camp (samples P3-30 through P3-36), and a portion of the leased agricultural fields (samples P3-37 through P3-40).

On March 6, 2014, EEI personnel again remobilized to the subject property to conduct the final round of soil sampling (**Figure 4**). A total of 17 discrete locations, generating 34 samples identified as P3-41 through P3-57, were collected. The areas targeted included the previously unsampled portion of the leased agricultural fields (samples P3-34 through P3-43) and the Color Sport Nursery (samples P3-44 through P3-57).

6.2 Laboratory Analytical Testing

57 discrete soil samples collected during this investigation were analyzed for Organochlorine Pesticides by EPA Test Method 8081A and for total arsenic and total lead by EPA Method 6020. The following bulleted items summarize the results of the laboratory analytical testing:

- Dieldrin was detected in 2 samples, DDT was in 11 samples, DDE in 12 samples, total lead in 48 samples, and total arsenic in 53 samples. The maximum reported concentrations were:
- Dieldrin, 12 micrograms per kilogram (µg/kg) in sample P3-47-0.5;
- DDT, 58 micrograms per kilogram (µg/kg) in sample P3-37-0.5;
- DDE ,170 µg/kg in sample P3-37-0.5;
- Total lead, 85 milligrams per kilogram (mg/kg) in sample P3-14-0.5;
- Total arsenic, 12 mg/kg in sample P3-49-0.5

Tables 4 which summarizes the laboratory analytical results as well as the ccomplete laboratory reports and COC documentation are provided in **Appendix I**.

6.3 Discussion of Testing Results

EEI compared the reported analyte concentrations to the Office of Environmental Health Hazard Assessment soil screening numbers, residential scenario (OEHHA, 2010), and to a 2008 DTSC study of southern California school sites determining a background arsenic concentration of 12 mg/kg (DTSC 2008). Of the five reported analytes, only lead occurred at values exceeding the OEHHA screening value. Arsenic is unique by the fact that ambient concentrations typically exceed the OEHHA value of 0.07 mg/kg by a factor of 100 or more (DTSC, 2008). To augment the impractical value, a 2008 study by DTSC was referenced which examined proposed school sites in southern California. DTSC determined that the ambient concentration of arsenic was 12 mg/kg and accordingly this value was referenced by EEI for comparison purposes. Below is a listing of the maximum detected concentration relative to its respective OEHHA or DTSC value:

- Dieldrin at a reported maximum of 12 ug/kg compares to the OEHHA value of 35 ug/kg;
- DDT at a reported maximum of 58 µg/kg compares to the OEHHA value of 1,600 ug/kg;
- DDE at a reported maximum of 170 µg/kg compares to the OEHHA value of 1,600 ug/kg;
- Total lead at a reported maximum of 85 mg/kg compares to the OEHHA value of 80 mg/kg;
- Total arsenic at a reported maximum of 12 mg/kg compares to the DTSC value of 12 mg/kg;

The maximum total lead concentration of 85 mg/kg, detected in soil sample P3-14-0.5, marginally exceeds the OEHHA screening level of 80 mg/kg. The maximum total arsenic concentration of 12 mg/kg, detected in soil sample P3-49-0.5, matched the background concentration of 12 mg/kg established by DTSC indicating that none of the analyzed samples exceeded acceptable background conditions for sites occupied by children in the study region.

7.0 FINDINGS AND OPINIONS

Based on the information obtained in this ESA, EEI has the following findings and opinions:

- *Known or suspected RECs* – are defined by the ASTM Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

  The following *known or suspected RECs* have been revealed during the preparation of this ESA:

  - According to the information reviewed, one 500-gallon underground fuel tank was removed in the mid to late 1980's from the Campo Vaquero corrals area. No information was available with the Orange County Health Care Agency regarding the tank removal, or any soil sampling performed. In addition, the area east of the Cow Camp maintenance shop area (used to store equipment) was historically used to bury old equipment and waste scraps. In March 2014, EEI conducted soil vapor testing which indicated the presence of ethylbenzene in this area that exceeded residential screening levels. Further investigation may be warranted in prior to development to assess possible soil contamination.

  - Two UST's were present at the Cow Camp maintenance shop. According to RMV personnel, these UST's were removed in 2003 under appropriate regulatory guidance and

soil samples were collected to assess the possible presence of contamination. Analytical results from the soil sampling did not detect actionable levels of contamination; and the OCHCA closed the tanks. In March 2014, EEI conducted soil vapor testing which indicated the presence of ethylbenzene and xylenes in this area that exceeded residential screening levels. Further investigation may be warranted in prior to development to assess possible soil contamination.

- A geophysical survey identified the location of a suspected burial area in the eastern portion of the Cow Camp storage yard. Soil matrix and soil vapor sampling conducted in August 2014 indicated that soil in one area was impacted with TPH of the diesel and motor oil ranges which exceeded applicable residential screening levels. In addition, soil vapor concentrations of xylenes exceeded the residential screening levels in three of the areas sampled. The widespread distribution suggested that the limits of the vapor plume could exceed the specific areas identified. Further investigation and/or remedial excavation in these areas prior to development appear to be warranted.

- The subject property has been utilized for agricultural purposes (i.e., orchards and nursery). Additional investigation efforts (i.e., soil sampling and analysis) were performed by EEI to further evaluate subject property soils for agricultural chemicals. The results of our agricultural chemical survey revealed concentrations of select organochlorine pesticides (e.g., Dieldrin, DDT and DDE) in site soils. The concentrations of these select organochlorine pesticides were less than applicable residential screening values. The maximum total lead concentrations marginally exceed the residential screening value and maximum total arsenic concentrations were within acceptable background levels. Therefore, further investigation does not appear to be warranted at this time. No additional investigation appears to be necessary at this time.

- *Controlled RECs (CRECs)* – are defined by the ASTM Standard Practice E 1527-13 as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a NFA letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls)

  No *CRECs* have been revealed during the preparation of this ESA.

- *Historical Recognized Environmental Conditions (HRECs)* – are defined by the ASTM Standard Practice E 1527-13 as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls).

  The following *HREC's* has been revealed during the preparation of this ESA.

  - **CalMat** (31511 Ortega Highway) was identified as the location of a closed LUST case. Based on the information reviewed, an unauthorized release of diesel was discovered in February 1990. Only the soil was impacted. The cause of the leak and the source of the leak are unknown. The case received regulatory closure on February 5, 1991 from OCHCA. No other pertinent information was noted.

- *De minimis* Conditions – include environmental concerns identified which may warrant discussion but do not qualify as RECs, as defined by the ASTM Standard Practice E 1527-13.

  The following *de minimis* conditions were identified during the preparation of this ESA.

  - Minor oil staining was noted at the Cow Camp shop, Olsen Pavingstone storage yard, and Solag/URE&V maintenance yard. However, there appeared to be no immediate threat to soil and/or groundwater beneath the subject property. EEI recommends that hazardous substances storage and handling practices at the subject property be improved to prevent spills.

8.0 DATA GAPS AND DEVIATIONS FROM ASTM PRACTICES

Section 3.2.20 (ASTM 1527-13) defines a data gap as "a lack or inability to obtain information required by the practice despite good faith efforts of the environmental professional to gather such information."

8.1 Historical Data Gaps

Specific Gaps

Based on the information obtained during the course of this investigation, no historical data gaps were encountered.

8.2 Regulatory Data Gaps

Based on the information obtained during the course of this investigation, no regulatory data gaps were encountered.

8.3 Onsite Data Gaps

Based on the information obtained during the course of this investigation, no onsite data gaps were encountered.

8.4 Deviations from ASTM Practices

Section 12.10 (ASTM 1527-13), states that all deletions and deviations from this practice shall be listed individually and in detail, including Client imposed constraints, and all additions should be listed.

EEI believes that there are no exceptions to, or deletions from, the ASTM Designation E1527-13 Guidelines.

9.0 CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the property identified as RMV PA3 (2,300-acres), the *subject property*. Any exceptions to, or deletions from, this practice are described in Section 8.0 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *subject property*, except for those discussed in Section 7.0 Findings and Opinions.

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Permits: PA140072 (PA3 & PA4 Addendum)

FIGURES

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX A
RESUME OF ENVIRONMENTAL PROFESSIONAL

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX B
DRAFT MASTER AREA PLAN PA3 and PA4 EXHIBITS AND TABLES /BOUNDARY MAPS/FIRM/PRELIMINARY TITLE REPORT

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX C
HISTORICAL AERIAL PHOTOGRAPHS/TOPOGRAPHIC MAPS/ CITY DIRECTORY REPORT/SANBORN MAP REPORT

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX D
ENVIRONMENTAL RECORDS SEARCH

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX E
OCFA INSECTION REPORTS

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX F
OCCUPANT/TENANT AND USER INTERVIEW QUESTIONNAIRES

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX G
PHOTOGRAPHIC LOG

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX H
VAPOR ENCROACHMENT SCREEN USER QUESTIONNAIRE

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX I
LIMITED AGRICULTURAL CHEMICAL SAMPLING ANALYTICAL RESULTS TABLE 4 AND LABORATORY REPORT AND CHAIN OF CUSTODY

County of Orange - OC Public Works
OC Development Services
CONDITIONALLY APPROVED

EEI
Geotechnical & Environmental Solutions

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

PHASE I ENVIRONMENTAL SITE ASSESSMENT

RANCHO MISSION VIEJO
Ranch Plan – Planning Area 4
Ortega Highway at Verdugo Canyon Road
San Juan Capistrano, Orange County, California 92675

December 29, 2014
(Date revised February 6, 2015)

Prepared by: EEI
EEI Project Number RMV-72030.1

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

Prepared for:

Jeff Brinton, Esq.
Paskerian, Block, Martindale & Brinton, LLP
85 Enterprise, Suite 470
Aliso Viejo, California 92656

Site location:

Rancho Mission Viejo
Ranch Plan - Planning Area 4
Ortega Highway at Verdugo Canyon Road
San Juan Capistrano, California 92675

Prepared and Edited by:

DRAFT
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Project Scientist

Reviewed by:

DRAFT
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EEI Project Number RMV-72030.1

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GENERAL SITE INFORMATION

Project Information: Rancho Mission Viejo - Planning Area 4

EEI Project Number: RMV-72030.1

Site Information:
Ortega Highway at Verdugo Canyon Road
San Juan Capistrano, Orange County, California 92675

Site Access Contact: Sam Couch, 949-240-3363

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Inspection Date: November 5, 2014; **Report Date:** December 29, 2014 (Date revised February 6, 2015)

Client Information:
Jeff Brinton, Esq.
Paskerian, Block, Martindale & Brinton, LLP
85 Enterprise, Suite 470
Aliso Viejo, California 92656

Site Assessor:
Bernard A. Sentianin – Principal Geologist

EP Certification:
I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in 40 CFR 312.10 (**Resume, Appendix A**).

DRAFT

_____
Bernard A. Sentianin – Principal Geologist

AAI Certification:
We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

DRAFT

_____
Bernard A. Sentianin – Principal Geologist

EXECUTIVE SUMMARY

At the request and authorization of the Client (Rancho Mission Viejo), EEI conducted a Phase I Environmental Site Assessment (ESA) for the subject property identified as the Planning Area Four (PA4) portion of Rancho Mission Viejo (RMV) Ranch Plan Planned Community, located approximately five miles east of the City of San Juan Capistrano, in unincorporated Orange County, California. The purpose of this Phase I ESA was to assess the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment (i.e., *recognized environmental condition* as delineated in ASTM E1527- 13). A *de minimis* condition is not considered a *recognized environmental condition*.

The subject property is located in southeastern Orange County, approximately five miles east of San Juan Capistrano along Ortega Highway. The subject property is located south of Ortega Highway, east of Antonio Parkway, the planned community of Ladera Ranch, the Ranch Plan village of Sendero, Planning Area 3 and south of Casper~~'~~s Regional Park. ~~Planning Area 4~~PA4 is located in Central San Juan Creek Canyon. San Juan Creek, which is a dominant physical feature extending northeast and southwest through the larger Ranch Plan Planned Community, is located north of ~~Planning Area 4~~PA4 (RMV Master Area Plan, 2014).

PA4 encompasses approximately 1,460 acres and is located on the lots identified by Assessor's Parcel Numbers (APNs): 125-150-20, -42, -44, -47, -55, -63, -64, -65, -66, -73, -74, and -84. The property is bounded by San Juan Creek to the west, vacant/agricultural land and Verdugo Canyon to the north, an access road and vacant land to the east, and vacant land to the south. Ortega Highway traverses the northwest corner of the property. According to the County of Orange Planning Department, the subject property is located within the Ranch Plan Planned Community Zoning District (PC).

The property is currently occupied by the following: Tree of Life Nursery (33201 Ortega Highway) in the northwest portion, which includes cultivation areas and several structures, including an office building, several green houses, a barn, and various trailers; an RMV ranching operation (former RJO horse ranch) (33101 Ortega Highway) south of the nursery, which includes a barn, grazing land, and two residences; an open field south of the ranch and east of Ortega Highway which is used to farm barley; a pump station for the Nichols Institute, maintained by the Santa Margarita Water District; and vacant open space with steep slopes in the eastern portion. EEI previously conducted environmental site assessments of Tree of Life and RJO, and a brief summary of these reports is included below in section 3.8 Previous Assessments.

Based on historical records such as aerial photographs, and topographic maps, the subject property was a mix of undeveloped land on the majority of the property (eastern portion) and agricultural fields on the western portion along San Juan Creek and Ortega Highway from at least 1938. In 1953, the northwestern portion of the property (present-day RMV, Tree of Life Nursery, and field east of Ortega Highway) appeared cleared and by the 1960's, RJO Horse Ranch with access roads from the north and south was present, and the field area south of RJO and east of Ortega Highway was cleared. County permit records indicate that in 1985, the Tree of Life Nursery first occupied the property. From 1989 through the present time, the property has remained in its current configuration with the exception of changes to the property tenants.

EEI contacted the Orange County Fire Authority and Health Care Agency, California Department of Toxic Substances Control (DTSC), State Water Resources Control Board (SWRCB), and reviewed other State and Federal databases to determine if the subject property, or any adjacent properties, were listed as hazardous waste generators, underground storage tank releases (UST), or as having other environmental concerns (i.e., spill, leak, or above-ground tank). Neither the subject property nor any adjacent property was listed on any of the databases searched.

In March 2014, EEI performed a limited agricultural chemical survey to evaluate soil beneath the agricultural portions (i.e. orchards) of PA4. A total of 10 discrete locations, identified as P4-1 through P4-10, were sampled. A total of 10 discrete soil samples (PA4-1 through PA4-10), collected at 6-inches below ground surface (bgs), were analyzed for Organochlorine Pesticides by EPA Test Method 8081A and for total arsenic and total lead by EPA Method 6020.

The results of the agricultural chemical testing indicated no samples analyzed detected any organochlorine pesticides (included in EPA Test Method 8081A) above the laboratory reporting limit (i.e., "non-detect"). Total lead was reported in 8 samples and total arsenic in all 10 samples. The maximum reported concentrations were: total lead, 8.7 milligrams per kilogram (mg/kg) in sample P4-10-0.5; total arsenic, 4.8 mg/kg in sample P4-6-0.5.

EEI compared the reported analyte concentrations to the Office of Environmental Health Hazard Assessment soil screening numbers, residential scenario (OEHHA, 2010), and to a 2008 DTSC study of southern California school sites determining a background arsenic concentration of 12 mg/kg (DTSC 2008).

Of the five reported analytes, only lead occurred at values exceeding the OEHHA screening value. Arsenic is unique by the fact that ambient concentrations typically exceed the OEHHA value of 0.07 mg/kg by a factor of 100 or more (DTSC, 2008). To augment the impractical value, a 2008 study by DTSC was referenced which examined proposed school sites in southern California. DTSC determined that the ambient concentration of arsenic was 12 mg/kg and accordingly this value was referenced by EEI for comparison purposes. Below is a listing of the maximum detected concentration relative to its respective OEHHA or DTSC value:

The maximum total lead concentration of 8.7 mg/kg, detected in soil sample P4-10-0.5, does not exceed the OEHHA screening level of 80 mg/kg. The maximum total arsenic concentration of 4.8 mg/kg, detected in soil sample P4-6-0.5, does not exceed the background concentration of 12 mg/kg established by DTSC, indicating that none of the analyzed samples exceeded acceptable background conditions for sites occupied by children in the study region. No additional investigation appears to be necessary at this time.

On November 5, 2014, EEI personnel conducted a site reconnaissance to physically observe the site and adjoining properties for conditions indicating a potential environmental concern. Concerns would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage and/or handling. No evidence of environmental concerns was noted on the subject property during our site reconnaissance.

EEI performed a Vapor Encroachment Screen (VES) for the subject property, in accordance with ASTM E2600-10. The purpose was to evaluate whether sites (e.g., gas stations, dry cleaners, or other listings of environmental concern) that store or dispose of potential chemicals of concern or have documented releases, may migrate as vapors onto the property, as a result of contaminated soil and/or groundwater which may be present on or near the property (i.e., a potential Vapor Encroachment Condition or pVEC).

Based on the results of a Tier 1 VES, EEI concluded that a pVEC for the subject property can be ruled out, because a pVEC does not or is not likely to exist due to the lack of known or suspected contaminated properties within the Area of Concern.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the property identified as RMV PA4 (1,460-acres), the *subject property*. Any exceptions to, or deletions from, this practice are described in Section 8.0 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *subject property*.

In addition, although not considered to be RECs, the following non-scope considerations were identified:

- According to the information reviewed, structures on the subject property were built prior to 1978. Therefore, the presence of asbestos-containing materials and lead-based paint within building materials is likely. In addition, stored roofing and construction materials were observed at locations on the property. EEI recommends a pre-demolition hazardous materials survey be performed on the site structures and related building materials, prior to any proposed future site improvements or demolition activities.

- Based on the subject property's historical and ongoing agricultural use, it is possible that buried/concealed agricultural by-products, both below and above ground may have existed or exists on the subject property. Any buried trash/debris, undocumented USTs or other waste encountered during future subject property development should be evaluated by an experienced environmental consultant prior to removal. If stained or suspicious soil is encountered during future grading operations, the material should be evaluated and if deemed necessary, characterized for proper disposal.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) was to assess the possible presence of *recognized environmental conditions* for the subject property identified as the Planning Area Four (PA4) portion of Rancho Mission Viejo (RMV) Ranch Plan Planned Community, located approximately five miles east of the City of San Juan Capistrano, in unincorporated Orange County, California (**Figure 1**). *Recognized environmental conditions (RECs)* include property uses that may indicate the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The term *RECs* is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment, and that would not be subject to enforcement action by a regulatory agency.

This ESA was performed in general conformance with the American Society for Testing and Materials (ASTM) *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, Designation E1527-13.

1.2 Scope of Services

The following scope of services was conducted by EEI:

- A review of readily available documents which included topographic, geologic, and hydrogeologic conditions associated with the subject site.
- A review of readily available maps, aerial photographs and other documents relative to historical subject site usage and development.
- A review of readily available federal, state, county, and city documents and database files concerning hazardous material storage, generation and disposal, active and inactive landfills, existing environmental concerns, and associated permits related to the subject property and/or immediately adjacent sites.
- A site reconnaissance to ascertain current conditions of the subject property.
- Interviews with person(s) knowledgeable of the subject property.
- The preparation of this report which presents our findings, conclusions, and recommendations.

1.3 Reliance

This ESA has been prepared for the sole use of Paskerian, Block, Martindale & Brinton, LLP (Client), and Rancho Mission Viejo, and the County of Orange. This assessment should not be relied upon by other parties without the express written consent of EEI, the Client, Rancho Mission Viejo, and the County of Orange. Any use or reliance upon this assessment by a party other than the Client, Rancho Mission Viejo, or the County of Orange; therefore, shall be solely at the risk of such third party and without legal recourse against EEI, its employees, officers, or directors, regardless of whether the action in which recovery of damages is brought or based upon contract, tort, statute or otherwise.

This assessment should not be interpreted as a statistical evaluation of the subject site, but rather is intended to provide a preliminary indication of onsite impacts from previous site usage and/or the release of hazardous materials. If no significant indicators of the presence of hazardous materials and/or petroleum contamination are encountered during this search, this does not preclude their presence.

The findings in this report are based upon published geologic and hydrogeologic information and information (both documentary and oral) provided by the Client, Rancho Mission Viejo, Orange County, Environmental Data Resources Inc. (EDR®) (i.e., agency database search, and various state and federal agencies, and EEI's field observations. Some of these data are subject to change over time. Some of these data are based on information not currently observable or measurable, but recorded by documents or orally reported by individuals.

2.0 PHYSIOGRAPHIC SETTING

2.1 Site Description

The subject property consists of proposed development property identified as the Planning Area Four (PA4) portion of Rancho Mission Viejo (RMV), Ranch Plan Planned Community (**Figure 2**). The subject property is located in southeastern Orange County, approximately five miles east of San Juan Capistrano along Ortega Highway. The subject property is located south of Ortega Highway, east of Antonio Parkway, the planned community of Ladera Ranch, the Ranch Plan village of Sendero, Planning Area 3 and south of Casper~~'~~s Regional Park. ~~Planning Area 4~~PA4 is located in Central San Juan Creek Canyon. San Juan Creek, which is a dominant physical feature extending northeast and southwest through the larger Ranch Plan Planned Community, is located north of ~~Planning Area 4~~PA4 (Master Area Plan, 2014).

PA4 encompasses approximately 1,460 acres and is located on the lots identified by Assessor's Parcel Numbers (APNs): 125-150-20, -42, -44, -47, -55, -63, -64, -65, -66, -73, -74, and -84 (**Appendix B**). The property is immediately bounded by San Juan Creek to the west, vacant/agricultural land and Verdugo Canyon to the north, an access road and vacant land to the east, and vacant land to the south. Ortega Highway traverses the northwest corner of the property. According to the County of Orange Planning Department, the subject property is located within the Ranch Plan Planned Community Zoning District (PC).

The property is currently occupied by the following: Tree of Life Nursery (33201 Ortega Highway) in the northwest portion, which includes cultivation areas and several structures, including an office building, several green houses, a barn, and various trailers; an RMV ranching operation (former RJO horse ranch) (33101 Ortega Highway) south of the nursery, which includes a barn, grazing land, and two residences; an open field south of the ranch and east of Ortega Highway which is used to farm barley; a pump station for the Nichols Institute, maintained by the Santa Margarita Water District; and vacant open space with steep slopes in the eastern portion (**Figure 2**). EEI previously conducted environmental site assessments of Tree of Life and RJO Horse Ranch, and a brief summary of these reports is included below in section 3.8 Previous Assessments.

Based on historical records such as aerial photographs, and topographic maps, the subject property was a mix of undeveloped land on the majority of the property (eastern portion) and agricultural fields on the western portion along San Juan Creek and Ortega Highway from at least 1938. In 1953, the northwestern portion of the property (present-day RMV, Tree of Life Nursery, and field east of Ortega Highway) appeared cleared and by the 1960's, RJO Horse Ranch with access roads from the north and south was present, and the field area south of RJO and east of Ortega Highway was cleared. County permit records indicate that in 1985, the Tree of Life Nursery first occupied the property. From 1989 through the present time, the property has remained in its current configuration with the exception of changes to the property tenants.

2.2 Topography

The site is located on a westward-sloping terrace, just east of San Juan Creek. Site elevations range from approximately 330 feet above mean sea level (amsl) along the southwestern margin of the subject property, to approximately 1,000 feet amsl along the eastern margin (USGS, 2012). The topographic gradient in the site vicinity ranges from 0.12 feet per foot towards the west-northwest to 0.44 feet per foot towards the west. Surface drainage from the site flows west into San Juan Creek, and eventually into the Pacific Ocean, approximately 8 miles to the southwest.

2.3 Regional and Local Geology

The site is located in an alluvial valley (San Juan Creek) on the southwestern slopes of the Santa Ana Mountains (Norris and Webb, 1990). The Santa Ana Mountains form the northwest margin of the Peninsular Ranges Geomorphic Province, and are comprised principally of granitic, metavolcanic, and sedimentary rocks of Jurassic to Pliocene age. The mountains are the result of relatively slow, late-Quaternary uplift which has shaped the range into a dissected horst block (CDMG, 2002).

Sedimentary deposits in the San Juan Creek area are a homoclinal sequence of marine and nonmarine formations including the Pliocene Capistrano and Monterey Formations, the Miocene Topanga Formation, the Eocene Sespe and Santiago Formations, the Paleocene Silverado Formation, and the Upper Cretaceous Williams and Ladd Formations. These deposits lie unconformably upon the older metamorphic and volcanic rocks, including the Jurassic Santiago Peak Volcanics and the Bedford Canyon Formation. Quaternary alluvial soils, derived primarily from weathering of the Santa Ana Mountains, form the gently sloping river terraces in the site vicinity (Morton, 1974).

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging predominantly to the sandy loams of the Capistrano and Cieneba associations, and rock outcrops of the Cieneba complex (USDA, 1978). Soils in the Capistrano association are typically well drained, gently to moderately sloping, and form in granitic alluvium of the coastal foothills. They have slow to medium runoff, a moderate erosion hazard, and are found in narrow areas in small valleys. Soils in the Cieneba association consist of excessively drained, moderately steep and form in material weathered from granitic rocks and sandstone. They are found along ridgetops, and are described with rapid runoff and a high erosion hazard.

Structural deformation in the vicinity of the site is related to the Elsinore Fault Zone, a major northwest-southeast trending strike-slip fault zone located approximately 15 miles to the northeast. Motion along the Elsinore Fault Zone is primarily right-lateral, although a vertical component may also be present. The Elsinore Fault Zone is considered active, with major ruptures occurring roughly every 250 years at magnitudes of between 6.5 - 7.5 (SCEC, 1998). Other major faults in the vicinity of the site include the Christianitos Fault (just west of the site), and the Newport Inglewood Fault (southwest of the site).

2.4 Regional and Local Hydrogeology

According to the California Regional Water Quality Control Board - San Diego Region (SDRWQCB, 1994), the site lies within the Upper San Juan Hydrologic Subarea of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet bgs.

The Upper San Juan Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately west of the site), Verdugo Canyon (north of the site), and Bell Canyon (northwest of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

2.5 Hydrologic Flood Plain Information

EEI reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) online database to determine if the subject property was in a flood zone. According to FIRM map (FM06059C0470J), the northwestern portion of the site near San Juan Creek lies within an area designated Zone A, an area defined as a 100-year flood zone. The remainder of the site lies outside of the flood plain within an area designated Zone X (i.e. outside a 500-year flood plain). A copy of the FIRM map is included in **Appendix B**.

3.0 SITE BACKGROUND

3.1 Site Ownership

Information regarding the subject property ownership was obtained from a First American Title Company Preliminary Title Report (PTR), dated December 8, 2014. According to the PTR, the current owner of the subject property, identified as PA4, on portions of APNs: 125-150-20, -42, -44, -47, -55, -63, -64, -65, -66, -73, -74, and -84, is listed as DMB San Juan Investment North, LLC, a Delaware limited liability company. A copy of the PTR is included in **Appendix B**.

3.2 Site History

EEI reviewed readily available information sources to evaluate historic land use in and around the subject site. These information sources include aerial photographs, and USGS maps. The information sources are reviewed in the following sections.

3.2.1 Historical Use Review

Aerial photographs and historical topographical maps, provided by EDR®, were reviewed to identify historical land development and any surface conditions which may have impacted the subject property. Photographs and historical topographic maps dating between 1901 and 2002 were reviewed. A 2014 aerial photograph was obtained from Google Earth®, of which is included herein (**Figure 2**). **Table 1** summarizes the results of the aerial photograph and historical topographic map review. Copies of the aerial photographs and historical topographic maps provided by EDR®, Inc. are included in **Appendix C**.

According to the information reviewed, the subject property was a mix of undeveloped land on the majority of the property (eastern portion) and agricultural fields on the western portion along San Juan Creek and Ortega Highway from at least 1938. In 1953, the northwestern portion of the property (present-day RMV, Tree of Life Nursery, and field east of Ortega Highway) appeared cleared and by the 1960's, RJO Horse Ranch with access roads from the north and south was present, and the field area south of RJO and east of Ortega Highway was cleared. By 1989, Tree of Life Nursery is present in the northern portion of its current lease area. From 1989 through the present time, the property has remained in its current configuration with the exception of changes to the property tenants.

TABLE 1
Summary of Historical Use Review

Year	Source and Scale	Comments
1901/ 1902	Topographic Map 1:250,000	Scale of the map did not allow for a detailed review of the subject property. Site vicinity seen as within an area labeled as Mission Viejo.
1938	Aerial Photograph 1:500	Subject property appeared with the western portions between San Juan Creek and Ortega Highway appeared with agricultural fields. The remaining portions appeared as undeveloped land, consisting of ridgelines and drainages covered with thick vegetation, generally trending in a north-south direction. Several unimproved roads/trails were seen in this portion of the property. The southern portion of the subject property, north of San Juan Creek.
1942	Topographic Map 1:50,000	San Juan Creek is present to the west and Ortega Highway traversed across the northwest portion of the property. Verdugo Canyon Road and the access road along the northern margin of the site are present. The map does not indicate any development on the remainder of the site. No other pertinent items were noted.
1946	Aerial Photograph 1:500	No apparent changes were noted to the subject property or adjacent property since the 1938 photograph.
1949	Topographic Map 1:24,000	The map notes the presence of a well on the RJO horse ranch property and a small structure along the southern margin. No other pertinent items were noted.
1953	Aerial Photograph 1 inch = 500 feet	The northwestern portion of the property (present-day RJO Horse Ranch, Tree of Life Nursery, and field east of Ortega Highway) appeared cleared. One trailer was noted on the present-day RJO Horse Ranch property. The remainder of the subject property was undeveloped and covered by thick vegetation.
1967	Aerial Photograph 1 inch = 500 feet	RJO Horse Ranch was present with several residential and barn-like structures; the field area south of RJO and east of Ortega Highway was cleared; the access road along Verdugo Canyon (north of site) was present; and the access road to the southern portion was also present. No other changes were noted.
1968/ 1975	Topographic Map 1:24,000	In 1968, the small structure along the southern margin is no longer present. The 1974 map noted the presence of three small structures and a small corral on the RJO property. A large unpaved race track was noted on the southern half of the Tree of Life property. No other pertinent items were noted.
1977	Aerial Photograph 1 inch = 500 feet	A corral was located in the southern portion of RJO Horse Ranch and a racetrack was located north of RJO, on the present day Tree of Life property. The field area south of RJO and east of Ortega Highway was cultivated with a small structure in the center of the property. A small structure was noted along the southern access road, in addition to a small structure along Verdugo Canyon (northern access road). The remainder of the subject property is covered by thick vegetation.
1980/ 1982/ 1988	Topographic Map 1:24,000	The 1980 map notes the presence of two small structures on the site next to the track, and one small structure along the northern margin. The 1982 map notes the presence of one structure located in the center of the track, and a water tank in the field south of RJO across Ortega Highway. The 1988 map notes the presence of one more small structure adjacent to the north of the track. No other pertinent items were noted.
1989	Aerial Photograph 1 inch = 500 feet	Tree of Life Nursery is present in the northern portion of its current lease area; the racetrack is still present on the southern portion. The field area south of RJO is occupied by 3 small structures. No other changes to the subject property were noted.
1994	Aerial Photograph 1 inch = 500 feet	The racetrack south of Tree of Life is no longer present. Tree of Life and RJO Horse Ranch are in their current configuration. No other changes were noted.
1997	Topographic Map 1:24,000	No apparent changes were noted to the subject property or adjacent properties.

TABLE 1
Summary of Historical Use Review

Year	Source and Scale	Comments
2002	Aerial Photograph 1 inch = 500 feet	Mapping changes were noted to the subject property or adjacent properties.
April 2014	Aerial Photograph Google Earth (Color)	The subject property was noted in its current configuration. No pertinent changes were noted.

3.2.2 City/County Directories

Directory listings associated with the subject property and street addresses located adjacent to and surrounding the subject property was obtained from EDR®, an environmental information/database retrieval service, as well as researched during a previous report, in Criss Cross and Haines City/County Directories for Orange County at the Main Library in Santa Ana, California. Addresses along the 20000 and 30000 block of Ortega Highway were listed in sources researched dated from 1972 through 2010. A copy of the City Directory Report is provided in **Appendix C**.

According to the city directories reviewed by EEI, there were no listings for the subject property addresses (33201 and 33101 Ortega Highway) prior to 1980. Nearby addresses along the 33000 block of Ortega Highway included the ~~Caspar's~~Caspers Regional Park (33401) from 1975, and the Ortega Rock Quarry (33977), from 1985, and the Nichols Institute (33608), from 1996, and Quest Diagnostics (33608), from 2008. **Table 2** summarizes the information reviewed in the directories for the non-residential addresses.

TABLE 2
Site Tenants/Occupants

Year	Subject Property Addresses - Ortega Highway	
	33201 Ortega Highway	33101 Ortega Highway
	Tree of Life Nursery	No Listing
1972	No Listing	No Listing
1975	No Listing	No Listing
1980	No Listing	Roberto Casillas
1985	No Listing	Osvaldo Gonzales
1990	Tree of Life Nursery	Osvaldo Gonzales
1996	Tree of Life Nursery	Osvaldo Gonzales
1999	Tree of Life Nursery	Helen Bean, Janice Wilson
2003	No Listing	Janice Wilson
2008	No Listing	Helen Bean, Pedro Sanchez
2013	No Listing	Ambrosio Zavaleta, Pedro Sanchez

3.2.3 Sanborn Fire Insurance Maps

EEI researched available Sanborn Fire Insurance Maps of the subject property. Sanborn Maps provide detailed information on site structures, uses, and occupancies and were typically utilized by insurance companies to evaluate potential fire risk. EEI requested a Sanborn map search from EDR®, an environmental information/database retrieval service. According to EDR, there is no Sanborn map coverage for the area of the subject property (**Appendix C**).

3.2.4 Orange County Building and Safety Department Files

EEI reviewed files at the Orange County Building and Safety Department (OCBSD) regarding historical and present site development. The OCBSD does not issue permits to sites without addresses. EEI was able to review one building permit (for an 1800-square foot storage building) and one certificate of occupancy, both issued to the tenant of 33201 Ortega Highway, Tree of Life Nursery, in December 1985. No permits were available for the other subject property address, and no other pertinent information was noted.

3.3 Regulatory Database Search

EEI reviewed known electronic database listings for possible hazardous waste generating establishments in the vicinity of the subject site, as well as adjacent sites with known environmental concerns. Facilities were identified by county, state, or federal agencies that generate, store, or dispose of hazardous materials. The majority of information in this section was obtained from EDR®, an environmental information/database retrieval service. A copy of the EDR® report is provided in **Appendix D,** along with a description of the individual databases. Following is a list of databases that were reviewed in the preparation of this report. The subject property was not listed in any of the databases reviewed as having environmental concerns.

3.3.1 Federal Databases

Federal National Priority site list (NPL) – No listings were reported within a one and one-half mile radius of the subject property.

Federal Delisted NPL site list – No listings were reported within a one and one-half mile radius of the subject property.

Federal Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list – No listings were reported within a one and one-half mile radius of the subject property.

Federal CERCLIS No Further Assessment Planned (NFRAP) site list – No listings were reported within a one and one-half mile radius of the subject property.

Federal Resource Conservation Recovery Act (RCRA) Corrective Action Sites (CORRACTS) facilities list – One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

Federal RCRA non-CORRACTS facilities list – No listings were reported within a one and one-half mile radius of the subject property.

Federal RCRA non-CORRACTS Treatment, Storage and Disposal (TSD) facility list (RCRA-TSDF) – No listings were reported within a one and one-half mile radius of the subject property.

Federal RCRA generators list (RCRA-LQG SQG CESQG) – Six sites within a one and one-half mile radius of the subject property were reported. The nearest sites, **Catalina Pacific Concrete** (31511 Ortega Highway, 0.50 miles west); and **Rancho Mission Viejo** (31474 Ortega Highway, 1.0 miles west), were listed under RCRA Generator database as small quantity (SQG) hazardous waste generators. No violations were noted.

Generator permits are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites has reported a release under the LUST database. ~~**Catalina Pacific Concrete** aka **Calmat** was reported as the site of a release and is discussed below under the Leaking Underground Storage Tank (LUST) database. Rancho Mission Viejo has not reported a release.~~

The remaining listings are located greater than one mile from the subject property. Based on the distance from the subject property (i.e., over one-quarter mile), the position (i.e., downhill/downgradient), and/or status (i.e., case closure), these sites are not considered as environmental concerns at this time.

Federal institutional controls/engineering controls (IC/EC) registries – No listings were reported within a one and one-half mile radius of the subject property.

Federal Emergency Response Notification System (ERNS) – One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

3.3.2 State and Regional Sources

State and Tribal equivalent NPL sites – No listings were reported within a one and one-half mile radius of the subject property.

State/Tribal equivalent CERCLIS (ENVIROSTOR) sites – One listing was reported within a one and one-half mile radius of the subject property: However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

State and tribal landfill and/or solid waste disposal site lists – One listing was reported within a one and one-half mile radius of the subject property: **Solag Disposal** (31641 Ortega Highway, 0.35 miles west) was reported on this database. As of March 4, 1999 the site has been closed; and therefore, not considered a concern.

State and tribal leaking storage tank lists (LUST) – Nine listings were reported within a one and one-half mile radius of the subject property: The nearest listing was for ~~**Caspar's**~~**Caspers Wilderness Park** (33401 Ortega Highway, 0.25 miles northwest) reported as gasoline release on January 21, 2004. Reportedly, only the surrounding soil was impacted. Soil sampling and analysis was conducted and the case was closed August 29, 2006. The next nearest site, ~~**Olsen Pavingstone, Inc. aka**~~ **Calmat** (31511 Ortega Highway, 0.50 miles west) was reported as the site of diesel/gasoline release in February 1990. The release case site was incorrectly identified as Olsen Pavingstone, Inc. under the LUST database. The OCHCA closed the site in February 1991.

The remaining listings are located greater than one-half mile from the subject property. Based on the distance from the subject property (i.e., over one-half mile), and/or the position (i.e., downhill/downgradient), these sites are not considered as environmental concerns at this time.

State and tribal leaking storage tank lists (SLIC) – No listings were reported within a one and one-half mile radius of the subject property.

State and tribal registered storage tank lists (UST) – Nine listings were reported within a one and one-half mile radius of the subject property: The nearest listing was for ~~**Caspar's**~~ **Caspers** **Wilderness Park** (33401 Ortega Highway, 0.25 miles northwest). The next nearest listings were for **CR&R, Inc.** (31641 Ortega Highway, 0.35 miles west), and **Catalina Pacific Concrete** (31511 Ortega Highway, 0.50 miles west).

UST permits are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites has reported a release under the LUST database.~~**Catalina Pacific Concrete** aka **Calmat** was reported as the site of a release and is discussed above under LUST database. CR&R has not reported a release.~~

The remaining listings are located greater than one-half mile from the subject property. Based on the distance from the subject property (i.e., over one-half mile), and/or the position (i.e., downhill/downgradient), these sites are not considered as environmental concerns at this time.

Above-Ground Storage Tanks – Seven listings were reported within a one and one-half mile radius of the subject property: The next nearest listings were for **CR&R, Inc.** (31641 Ortega Highway, 0.35 miles west), and **Catalina Pacific Concrete** (31511 Ortega Highway, 0.50 miles west).

AST permits are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites has reported a release under the LUST database.~~**Catalina Pacific Concrete** aka **Calmat** was reported as the site of a release and is discussed above under LUST database. CR&R has not reported a release.~~

The remaining listings are located greater than one-half mile from the subject property. Based on the distance from the subject property (i.e., over one-quarter mile), and/or the position (i.e., downhill/downgradient), these sites are not considered as environmental concerns at this time.

State and Tribal voluntary cleanup sites – No listings were reported within a one and one-half mile radius of the subject property.

Local Brownfield lists – No listings were reported within a one-half mile radius of the subject property.

Local Lists of Landfill and Hazardous Waste/Contaminated Sites – No listings were reported within a one and one-half mile radius of the subject property.

Facility Inventory Database (CA FID UST) and Statewide Environmental Evaluation and Planning System (SWEEPS) – Six listings were reported within a one and one-half mile radius of the subject property: The nearest listings were for ~~**Caspar's**~~**Caspers** **Wilderness Park** (33401 Ortega Highway, 0.25 miles northwest), **CR&R, Inc.** (31641 Ortega Highway, 0.35 miles west), **Catalina Pacific Concrete** (31511 Ortega Highway, 0.50 miles west), **Rancho Mission Viejo** (31474 Ortega Highway, 1.0 miles west), and **Nichols Institute** (33608 Ortega Highway, 1.0 miles north).

UST permits are not generally rationale for environmental concern, unless a release has occurred at the site. None of the aforementioned sites have reported a release under the LUST database. ~~**Catalina Pacific Concrete** aka **Calmat** was reported as the site of a release and is discussed above under LUST database. CR&R has not reported a release.~~

The remaining listings are located greater than one mile from the subject property. Based on the distance from the subject property (i.e., over one-half mile), and/or the position (i.e., downhill/downgradient), these sites are not considered as environmental concerns at this time.

Local Lists of Registered Storage Tanks (HIST UST) – Three listings were reported within a one and one-half mile radius of the subject property. **Catalina Pacific Concrete** (31511 Ortega Highway, 0.50 miles west), was listed. UST permits are not generally rationale for environmental concern, unless a release has occurred at the site. The aforementioned site has not reported a release under the LUST database. ~~**Catalina Pacific Concrete** aka **Calmat** was reported as the site of a release and is discussed above under LUST database.~~

The remaining listings are located greater than one-half mile from the subject property. Based on the distance from the subject property (i.e., over one-half mile), and/or the position (i.e., downhill/downgradient), these sites are not considered as environmental concerns at this time.

California Hazardous Material Incident Report System (CHMIRS) – Six listings were reported for the same site, **Nichols Institute** aka **Santa Margarita Water District** (33608 East Ortega Highway, one mile north). Based on its location (i.e. more than one-half mile of the subject property), this site is not expected to represent a significant environmental concern.

Local Land Records – No listings were reported within a one-half mile radius of the subject property.

Records of Emergency Release Reports – No listings were reported for the subject property.

RCRA Non-GEN – One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

US Mines- Two listings were reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

PCB Activity Database (PADS) - One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

Facility Index System (FINDS) - Eight listings were reported within a one and one-half mile radius of the subject property. The listings were either dual listed and discussed under other databases, and/or are located more than one-half mile of the subject property and are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

Underground Wells (UIC) - Two listings were reported within a one and one-half mile radius of the subject property. The listings were located more than one-half mile of the subject property and/or are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

National Pollutant Discharge Elimination System (NPDES) – Five listings were reported within a one and one-half mile radius of the subject property. The listings included: **Ewles Materials** (32501 Ortega Highway, 0.25 miles west); **Solag Disposal** (31641 Ortega Highway, 0.35 miles west), **Olsen Pavingstone, Inc.** (31511 Ortega Highway, 0.50 miles west), **Cemex** (31601 Ortega Highway, 0.50 miles west) and **Greenstone Materials, Inc.** (31507 Ortega Highway, 0.75 miles west). NPDES permits are not considered an environmental concern.

DTSC's Hazardous Waste and Substances Site List - Site Cleanup (CORTESE) No Longer Updated (Hist CORTESE) – Three listings were reported within a one and one-half mile radius of the subject property: The nearest site, was listed as **Catalina Pacific Concrete** (31511 Ortega Highway, 0.50 miles west).

Cortese permits are not generally rationale for environmental concern, unless a release has occurred at the site. The aforementioned site has not reported a release under the LUST database.

The remaining listings were dual listed and discussed under other databases, and is located more than one-half mile of the subject property and is situated hydrologically cross- to down-gradient. Based on this information this site is not expected to represent a significant environmental concern.

SWRCB Enforcement (ENF) - One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

DTSC Hazardous Waste Manifests (HAZNET) - Seventeen listings were reported within a one and one-half mile radius of the subject property. The nearest listings included: **Solag Disposal** (31641 Ortega Highway, 0.35 miles west), **Olsen Pavingstone, Inc.** (31511 Ortega Highway, 0.50 miles west), **Cemex** (31601 Ortega Highway, 0.50 miles west), and **Rancho Mission Viejo** (31471 Ortega Highway, 1.0 miles west).

HAZNET permits are not generally rationale for environmental concern, unless a release has occurred at the site. None of the aforementioned sites has reported a release under the LUST database.

The remaining listings were either dual listed and discussed under other databases, and/or are located more than one-mile mile of the subject property and are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

Toxic and Criteria Pollutant Emissions (EMI) - Eight listings were reported within a one and one-half mile radius of the subject property: The nearest listings were for **Ewles Materials** (32501 Ortega Highway, 0.25 miles west), and **Catalina Pacific Concrete, Olsen Pavingstone, Inc.,** and **Industrial Concrete** (31511 Ortega Highway, 0.50 miles west).

EMI permits are not generally rationale for environmental concern, unless a release has occurred at the site. **Catalina Pacific Concrete** aka **Calmat** was reported as the site of a release and is discussed above under LUST database. Ewles Materials has not reported a release.

The remaining listings were either dual listed and discussed under other databases, and/or are located more than one-half mile of the subject property and are situated hydrologically cross- to down-gradient. Based on this information these sites are not expected to represent a significant environmental concern.

Hazardous Waste Facilities (HWP) - One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

Aerometric Information Retrieval System (US AIRS) Air Pollutants - One listing was reported within a one and one-half mile radius of the subject property. However, based on a review of the site, it is not located in close proximity to the subject property, and is therefore not considered a concern.

Waste Discharge System (WDS) - Three listings were reported within a one and one-half mile radius of the subject property. The nearest listings were for **Ewles Materials** (32501 Ortega Highway, 0.25 miles west), and **Olsen Pavingstone, Inc.** (31511 Ortega Highway, 0.50 miles west). WDS permits are not generally rationale for environmental concern, unless a release has occurred at the site. Neither of the aforementioned sites has reported a release under the LUST database.

The remaining listing was dual listed and discussed under other databases, and is located more than one-half mile of the subject property and situated hydrologically cross- to down-gradient. Based on this information this site is not expected to represent a significant environmental concern.

Notify 65– No listings were reported within a one and one-half mile radius of the subject property.

EDR US Historical Auto Station list – No listings were reported within a one and one-half mile radius of the subject property.

EDR US Historical Cleaners – No listings were reported within a one and one-half mile radius of the subject property.

EDR Recovered Government Archives– No listings were reported for the subject property.

Recovered Government Archive (RGA) LUST – Five listings were reported within a one and one-half mile radius of the subject property: The nearest listing ~~Cal Mat~~Calmat (former) (31511 Ortega Highway, 0.50 miles west); was reported as the site of a release and is discussed above under LUST database.

The remaining listings were dual listed and discussed under other databases, and is located more than one-half mile of the subject property and situated hydrologically cross- to down-gradient. Based on this information this site is not expected to represent a significant environmental concern.

Landfill Database (RGA LF) – Two listings were reported within a one and one-half mile radius of the subject property: The listings, **Solag Disposal** and **CR&R** (31641 Ortega Highway, 0.25 miles west); were dual listed and discussed under databases above.

Orphan Summary - The EDR® database search report lists a number of sites identified as "orphans." EDR was unable to confirm the physical locations of these sites relative to the subject property or to assess whether they were located within the designated search radii. EEI attempted to locate these "orphan" sites, to the extent possible, using various maps and our knowledge of the site area. Any of the "orphan" sites determined to be within the designated search radii were included in our evaluation of the various listed sites potential to result in a recognized environmental condition relative to the subject property.

3.4 Regulatory Agency Review

3.4.1 Orange County Fire Authority

EEI contacted the Orange County Fire Authorities (OCFA) Community Right to Know Records Office for information regarding hazardous materials inventory, Business Emergency Plan, or Code Enforcement inspections at the subject property.

EEI obtained records regarding routine inspection and hazardous material storage at the subject property (Tree of Life Nursery), issued by the OCFA. The OCFA provided EEI with the most recent inspection report on file dated March 25, 2013. The Business type was listed as Crops and Orchards, and as a Category 4, for Low/Routine Hazards. No violations were noted during the inspection.

According to these records, the Tree of Life Nursery held an operating permit for a motor vehicle fuel dispensing station (reissuance) and administrative drive time. No other site within the subject property had been assigned an address, therefore, no files were available.

The hazardous materials storage (chemicals) stored on site were listed as Diesel Fuel; Ureaform; Triact 70 (Neem Oil); Sulodue Maxx (Meefnoxam); Round Up (Glyphosate Isopropylamine Salt); Ronstar 50 (Oxadiazon); Phyton (Copper Sulfate); Heritage Fungicide (Azooxystrobin); Dursban 50W (Chlorpyrifos); Bifenthrin Talstar (Bifenthrin); and Bayleton 25 (Triadiemfon). A copy of the inspection report is provided in **Appendix E**.

3.4.2 Orange County Health Care Agency

EEI reviewed OCHCA Environmental Health Department online databases including the Hazardous Waste Facilities, Industrial Cleanup program, Local Oversight Program (LOP), Non-petroleum Underground Storage Tanks, and Underground Tank Facilities (UTF) Listing, and Land Fill Sites (maintained by the California Integrated Waste Management Board), to determine if the subject property or any adjacent properties were listed as having an environmental concern. The aforementioned databases were updated as of December 1, 2014. Neither the subject property nor adjacent property was listed on any of the other databases researched.

3.4.3 Department of Toxic Substances Control

EEI reviewed the online database EnviroStor (2014), which provides records on LUSTs, SLICs, Priority cleanup sites and states sites, which is maintained by the Department of Toxic Substances Control (DTSC). Neither the subject property nor adjacent property was listed on any of the other databases researched.

3.4.4 State Water Resources Control Board

EEI reviewed the online database GeoTracker, which provides records on LUSTs and Spills, Leaks, Investigation and Cleanup (SLIC) sites, which is maintained by the State Water Quality Control Board (SWRCB, 2014). Neither the subject property nor adjacent property was listed on any of the other databases researched.

3.4.5 Review of Division of Oil, Gas and Geothermal Resources Files

Oil and gas wells were not observed at the subject property during our site reconnaissance. A review of the California Division of Oil, Gas, and Geothermal Resources Website for oil and gas fields in California and Alaska (CDOGGR, 2014) did not indicate the presence of oil and gas wells on or adjacent to the subject property (identified as within Township 07S, Range 06W).

3.4.6 National Pipeline Mapping System

EEI reviewed the National Pipeline Mapping System (NPMS, 2014) public viewer website for gas transmission pipelines and hazardous liquid trunklines on or close to the subject property. According to the information reviewed, no pipelines are located on or adjacent to the subject property.

3.5 Interview with Current Property Owner

The current property owner for the subject property, DMB San Juan Investment North, LLC, is being represented by the User of this Phase I ESA report (i.e. the Client - Rancho Mission Viejo). Information regarding the subject property was gathered through an interview with the Client and is documented below in Section 3.6.

3.6 Interview with Current Property Occupants/Tenants

EEI contacted the property owner representatives for information regarding the subject property, for which there are two separate occupants/tenants. To obtain this information, EEI provided the tenant contacts with a questionnaire as well as met with the representatives during the site reconnaissance. Information provided by each of the property tenants is documented below. Copies of each of the occupant/tenant interview questionnaires are included in **Appendix F**.

Tree of Life Nursery - 33201 Ortega Highway

Mr. Mike Evans, on behalf of Tree of Life Nursery, completed the interview regarding this property. Mr. Evans stated that the current use of the property is as a container plant nursery (Tree of Life). He stated that past use of the property was as the RMV Thoroughbred Farm. Mr. Evans stated that there are two ASTs containing diesel fuel for the farm tractors on the property; however, no USTs are located on the property. Mr. Evans stated that there are no noxious odors, hydraulic lifts, sumps, hazardous substances (apart from the diesel fuel previously mentioned), unlabeled drums, poly-chlorinated biphenyls (PCBs), asbestos containing materials (ACMs), lead-based paint (LBP), stained soils, or environmental cleanups associated with the subject property. Mr. Evans indicated the presence of ACMs and lead-based paint not applicable. Mr. Evans also stated that there are no deed restrictions or other activity or land use restrictions, or environmental liens associated with the subject property.

Rancho Mission Viejo (Former RJO Horse Ranch) – 33101 Ortega Highway

The current occupant of this portion of the property, Rancho Mission Viejo, is also the User (i.e. Client) of this Phase I ESA report. Information regarding the subject property was gathered through an interview with the Client and is documented below in Section 3.7.

3.7 User Provided Information

Pursuant to ASTM E1527-05, EEI provided a Phase I ESA User Specific Questionnaire to the "user" (the person on whose behalf the Phase I ESA is being conducted), Mr. Sam Couch, Vice President of Planning and Entitlement with Rancho Mission Viejo. The User Specific Information provided by Mr. Couch is documented below. A list of the user specific questions (per ASTM E1527-05) with Mr. Couch's' associated responses is included in **Appendix F**.

3.7.1 Environmental Liens or Activity and Land Use Limitations

Mr. Couch stated that there are no identified environmental liens or activity and land limitations (AULs) on the subject property. To supplement this information, the client Mr. Couch provided EEI with a copy of a PTR for the subject property prepared by First American Title Company, dated December 8, 2014. A review of the PTR confirmed the absence of any environmental liens or and other AULs associated with the subject property. .

3.7.2 Specialized Knowledge

Mr. Couch stated that RMV is the current developer of the subject property and represents the other private landowner interest in all transactions. According to Mr. Couch, user knowledge is limited to RMV operations including raising cattle/horses and citrus/avocado farming. Mr. Couch added that past uses of the PA4 have been for agricultural, nursery and other lease uses for the past 120 years. Existing non-residential agricultural land uses include avocado and citrus production areas and barley fields. He added that chemicals related to Ranch operations include pesticides/herbicides, fertilizers, petroleum-related fuels and lubricants for ranch vehicles, and chemicals related to facility maintenance (paint, etc.)

3.7.3 Valuation Reduction for Environmental Issues

Mr. Couch stated that the relationship of the purchase price to the the fair market value on the property is not applicable in this case.

3.7.4 Presence or Likely Presence of Contamination

Mr. Couch stated that he was not aware of any obvious indicators that point to the presence or likely presence of contamination at the property.

3.7.5 Other

Mr. Couch stated that the reason the Phase I ESA is required is due to pre-development due diligence to satisfy County of Orange requirements. Mr. Couch noted that EEI has previously prepared site assessment reports for the subject property which have been provided under a separate cover.

3.8 Previous Assessments

EEI previously reviewed or conducted environmental site assessments for the subject property and several properties which are located on the subject property. The following is a brief summary of these reports:

3.8.1 Tree of Life Nursery, Phase I ESA (33201 Ortega Highway), dated April 2002

In April 2002, EEI completed a Phase I ESA of the property occupied by the Tree of Life Nursery, located along Ortega Highway in the northwest corner of the subject property. According to the report, the nursery included cultivation areas, an office building, two greenhouses, a workshop shed, a barn, various trailers, and a vacant field of approximately fifteen acres. The site was not listed on any regulatory database as having an environmental concern or operating permit. During the site reconnaissance, hazardous substances/waste were noted in and around the shop area, including small quantities of pesticides, herbicides, fertilizers, new and used oil, diesel, gasoline, antifreeze, and vehicle batteries. Overall housekeeping was good, and storage containers appeared properly labeled and in good condition, with the exception of several small gasoline containers that were stored on unpaved portions of the shop floor. One 500-gallon above-ground diesel tank and one 250-gallon AGT containing diesel were noted on the property, both of which were within secondary containment. No spills were noted on the property during the site visit. No evidence of environmental concern was observed at the property during the time of the assessment, and EEI did not recommended any additional investigations of the site.

3.8.2 RJO Horse Ranch, Phase I ESA (33101 Ortega Highway), dated April 2002

In April 2002, EEI completed a Phase I ESA of the property which was occupied by the RJO Horse Ranch, located along Ortega Highway in the northwest corner of the subject property. According to the report, the ranch included two barns, a grazing area, a corral, and two residential units. The site was not listed on any regulatory database as having an environmental concern or operating permit. No evidence of environmental concern was observed at the property during the time of the assessment, and EEI did not recommended any additional investigations of the site.

3.8.3 Phase I ESA, East Ortega (~~Planning Area 4~~PA4), dated May 1, 2003

In May 2003, EEI completed a Phase I ESA for the subject property (i.e. PA4). The property was described as approximately 1,460 acres and was identified by APNs 125-150-44, -55, -62, -63, -64, -65, and -66. The property was occupied by the current occupant, Tree of Life Nursery (33201 Ortega Highway) in the northwest portion, which included cultivation areas and several structures, including an office building, several green houses, a barn, and various trailers. The site was also occupied by the former RJO horse ranch (33101 Ortega Highway), located south of the nursery, which included a barn, grazing land, and two residences. An open field south of RJO and east of Ortega Highway was used to farm barley. At the time of the report, the site also included a pump station for the Nichols Institute, maintained by the Santa Margarita Water District; and vacant open space with steep slopes in the eastern portion.

Based on a site reconnaissance, a review of physiographic, historical and regulatory information, and information provided by the property owner, the following REC in connection with the property was revealed:

- Evidence of past agricultural use had been revealed. If residential or other potentially health-sensitive uses are contemplated (e.g., schools, child care facilities, etc.), EEI recommended that an investigation be conducted to assess the possible presence of residual pesticides in accordance with DTSC's Interim Guidance for Sampling Agricultural Soils dated June 28, 2000.

3.9 Other Environmental Issues

3.9.1 Asbestos-Containing Materials

Asbestos, a natural fiber used in the manufacturing of a number of different building materials, has been identified as a human carcinogen. Most friable (i.e., easily broken or crushed) Asbestos-Containing Materials (ACM) were banned in building materials by 1978. By 1989, most major manufacturers had voluntarily removed non-friable ACM (i.e., flooring, roofing, and mastics/sealants) from the market. These materials, however, were not banned completely.

An ACM survey was not conducted at the subject property as part of this Phase I ESA. No ACM was noted in existing structures during the site reconnaissance. However, according to the information reviewed, structures on the subject property were built prior to 1978. Therefore, the presence of asbestos-containing materials is likely. EEI recommends ACM testing of building materials prior to improvements or demolition activities.

3.9.2 Lead-Based Paint

Lead-Based Paint has been identified by Occupational Safety and Health Administration (OSHA), the United States Environmental Protection Agency (U.S. EPA) and the Department of Housing and Urban Development (HUD) as being a potential health risk to humans, particularly children, based on its effects to the central nervous system, kidneys, and bloodstream. The risk of Lead-Based Paint has been classified by HUD based upon the age and condition of the painted surface. This classification includes the following:

- maximum risk is from paint applied before 1950;
- a severe risk is present from paint applied before 1960;
- a moderate risk is present from paint applied before 1970;
- a slight risk is present from paint applied before 1977; and
- paint applied after 1977 is not expected to contain lead.

According to the information reviewed, structures on the subject property were built prior to or during 1978. Therefore, the presence of lead based paint is likely. Although this is not considered a recognized environmental condition (REC), a hazardous materials survey is recommended prior to demolition onsite.

3.9.3 Radon

Radon is a radioactive gas which has been identified as a human carcinogen. Radon gas is typically associated with fine-grained rock and soil, and results from the radioactive decay of radium. The U.S. EPA recommends that homeowners in areas with radon screening levels greater than 4 Picocurries per liter (pCi/L) conduct mitigation of radon gas to reduce exposure.

Sections 307 and 309 of the Indoor Radon Abatement Act of 1988 (IRAA) directed the U.S. EPA to list and identify areas of the U.S. with the potential for elevated indoor radon levels. U.S. EPA's Map of Radon Zones (EPA-402-R-93-071) assigns each of the 3,141 counties in the U.S. to one of three zones based on radon potential:

- Zone 1 counties have a predicted average indoor radon screening level greater than 4 pCi/L.
- Zone 2 counties have a predicted average indoor radon screening level between 2 and 4 pCi/L.
- Zone 3 counties have a predicted average indoor radon screening level less than 2 pCi/L.

Based on such factors as indoor radon measurements; geology; aerial radioactivity; and soil permeability, the U.S. EPA has identified the County of Orange as Zone 3 (i.e., a predicted average indoor radon screening level than 2 pCi/L). EEI does not consider radon as a significant environmental concern at this time.

3.9.4 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCB's) are used in electrical equipment, particularly in capacitors and transformers, because they are electrically nonconductive and stable at high temperatures. PCB's persist in the environment, accumulate in organisms, and concentrate in the food chain.

The disposal of these compounds is regulated under the Toxic Substances Control Act, which banned the manufacture and distribution of PCB's. By Federal definition, PCB equipment contains 500 parts per million (ppm) or more of PCB's, where PCB-contaminated equipment contains PCB concentrations greater than 50 ppm but less than 500 ppm. The US Environmental Protection Agency (EPA), under TSCA guidance, regulates the removal and disposal of all sources of PCB's containing 50 ppm or more.

Any electrical equipment containing dielectric insulating fluids or coolants, manufactured prior to 1976, should be considered as potentially PCB-containing. This includes transformers, capacitors, and fluorescent light fittings. In addition, PCB's may also be found as a stabilizer in older lubricating oils, pesticide extenders, cutting oils, hydraulic fluids, paints, sealants, and flame retardants (UNEP, 1999). The management of potential PCB-containing transformers is the responsibility of the local utility or the transformer owner. Actual material samples need to be collected to determine if transformers are PCB-containing.

According to the information reviewed, structures on the subject property were built prior to 1976. Therefore, the presence of PCB-containing equipment is likely. Although this is not considered a recognized environmental condition (REC), a hazardous materials survey is recommended prior to demolition onsite.

4.0 SITE RECONNAISSANCE

4.1 Purpose

The purpose of our site reconnaissance was to physically observe the subject site, site structures, and adjoining properties for conditions indicating an existing release, past release, or threatened release of any hazardous substances or petroleum products into structures on the subject site, or into soil and/or groundwater beneath the subject property. This would include any evidence of contamination, distressed vegetation, petroleum-hydrocarbon surface staining, waste drums, USTs, ASTs, illegal dumping, or improper waste storage/handling. Detailed information pertaining to our site reconnaissance is provided in the text below.

4.2 Subject Site

On November 5, 2014, EEI personnel conducted an unescorted reconnaissance of the subject property (i.e., ~~Planning Area 4~~PA4). EEI had previously conducted site reconnaissance's of the subject property in 2004, and periodically over the last decade as part of due diligence for ongoing Ranch operations. The most recent site reconnaissance on November 5, 2014, included the majority of accessible subject property locations including the southern/eastern margin of San Juan Creek, and the properties adjoining Ortega Highway, including Tree of Life Nursery, former RJO Horse Ranch, Verdugo Canyon, and the fallow agricultural fields

known as the South 40 Pasture. Visual conditions observed during our reconnaissance of the subject property are documented in a Photographic Log (**Appendix G**), and summarized in **Table 3**.

The subject property is located north and south of Ortega Highway; east of Antonio Parkway and Planning Area 3; and south of Casper's Regional Park. San Juan Creek is located along the northwestern margin of the subject property, which lies in Central San Juan Creek Canyon. The southeastern margin of the property consists of undeveloped hillside.

Several pole-mounted transformers were noted along Ortega Highway. According to San Diego Gas and Electric personnel, it is highly unlikely that the transformers serving the facility contain polychlorinated biphenyl (PCB's) at concentration levels requiring special management under the Environmental Protection Agency's rules.

Tree of Life Nursery

Tree of Life Nursery is a wholesale native plant nursery, which has cultivation areas, greenhouses, an office building, a retail building, a barn, and trailers. It has been in operation at the property since 1985. . Although the property encompasses approximately 34 acres, the nursery only utilizes the northern half of the property. The remainder of the property, once part of the adjacent RJO Horse Ranch, is being left open for potential expansion.

A workshop/chemical storage area was noted in the central portion of the property. Hazardous substances/waste were noted in and around this area, including small quantities of pesticides, herbicides, fertilizers, new and used oil, diesel, gasoline, antifreeze, and vehicle batteries. Overall housekeeping was good, and storage containers appeared properly labeled and in good condition. However, several small gasoline containers were stored on unpaved portions of the shop floor. A small (250-gallon) above ground diesel tank is also located in the shop area. The tank appeared in good condition and was situated within secondary containment. No surface spillage was noted.

One 500-gallon above ground (stand) tank containing red diesel is located on the western margin of the subject property. This tank was also situated within secondary containment, with no spillage or leakage noted.

No evidence of ~~evidence of~~ contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

RJO Horse Ranch

The site is a triangular-shaped lot that encompasses approximately 24 acres. It is currently occupied by a horse ranch, which includes a residence, large barn, a grazing area, and a corral. A small water well was noted to the west of the residence. According to historical research, these structures have existed on the site since at least 1968.

No evidence of ~~evidence of~~ contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

Verdugo Canyon

The former campground area is currently an undeveloped and unoccupied lot encompassing approximately one acre. It is located in the northeastern portion of the subject property, adjacent to Ortega Highway, at Verdugo Canyon Road. It is situated on a narrow alluvial canyon that slopes gently upward to the northeast, following a tributary to San Juan Creek.

Access to the site is through a gated entrance on Ortega Highway. An unpaved access road crosses through the site and continues to the northeast into the adjacent hills. A portable toilet was noted near the northern margin of the property.

No evidence of ~~evidence of~~ contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

South 40 Pasture

The agricultural fields located south of the former RJO Horse Ranch and east of Ortega Highway is used for barley cultivation. A pump station for the Nichols Institute is located in the southern portion of the property, near the gated entrance. An unpaved road transects the field from west to east, near the southern margin, and alongside Ortega Highway, near the western margin. No other structures or pertinent features were noted.

No evidence of ~~evidence of~~ contamination, distressed vegetation, petroleum-hydrocarbon staining, waste drums, illegal dumping, or improper waste storage/handling were noted during the site reconnaissance.

TABLE 3
Summary of Site Reconnaissance

Item	Concerns	Comments
General Housekeeping	No	Facility appears well maintained and in good condition.
Surface Spills	No	No concerns observed.
Stained Surfaces	No	No concerns observed.
Fill Materials	No	No concerns observed.
Pits/Ponds/Lagoons	No	No concerns observed.
Surface Impoundments	No	No concerns observed.
ASTs/USTs	No	Tree of Life Nursery: 500-gallon AGT containing red diesel and 250-gallon AGT containing diesel.
Distressed Vegetation	No	No concerns observed.
Wetlands	No	West of property, adjacent to San Juan Creek.
Electrical Substations	No	No concerns observed.
Areas of Dumping	No	No concerns observed.
Transformers	No	Several pole-mounted transformers located along Ortega Highway.
Waste/Scrap Storage	No	Equipment bone yard noted along tree line on western portion of Tree of Life lease property.
Chemical Use/Storage	No	Consistent with facility usage. Chemicals appeared properly labeled and stored.

4.3 Adjacent Properties

EEI conducted a visual and auto reconnaissance of the adjoining neighborhoods (to the extent practical) to evaluate the potential for offsite impacts that may affect the subject property. These would include evidence of chemical storage or usage, surface staining or leakage, distressed vegetation, or evidence of illegal dumping.

The property is bounded by San Juan Creek to the west, vacant/agricultural land and Verdugo Canyon to the north, an access road and vacant land to the east, and vacant land to the south. Ortega Highway traverses the northwest corner of the property. Based on EEI's site reconnaissance, no evidence of environmental concerns was noted on adjacent properties. No service stations, dry cleaners, or heavy industrial properties were located in the immediate vicinity of the subject property.

5.0 VAPOR ENCROACHMENT SCREEN

ASTM Standard E2600-10 Standard Guide for Vapor Encroachment Screening (VES) on property Involved in Real Estate Transactions was used as guidance for conducting a VES for the subject property. The purpose of the screening is to determine whether a Vapor Encroachment Condition (VEC) exists from chemicals of concern (COC) that may migrate as vapors onto a property as a result of contaminated soil and groundwater on or near the subject property. The screening involves a two tiered approach to assessing VEC risk as described below.

The VES process includes a review of site conditions (e.g., aerial photographs, city directories, and environmental database information), which is information typically collected during a Phase I ESA, user provided information, and in some instances the use of a third-party vapor encroachment application. The following sections describe the VES performed on the subject property.

5.1 Site Conditions

The site is located on a westward-sloping terrace, just east of San Juan Creek. Site elevations range from approximately 330 feet above mean sea level (amsl) along the southwestern margin of the subject property, to approximately 1,000 feet amsl along the eastern margin (USGS, 2012). The topographic gradient in the site vicinity ranges from 0.12 feet per foot towards the west-northwest to 0.44 feet per foot towards the west. Surface drainage from the site flows west into San Juan Creek, and eventually into the Pacific Ocean, approximately 8 miles to the southwest.

Soil in the vicinity of the site has been identified by the United States Department of Agriculture - National Resource Conservation Service as belonging predominantly to the sandy loams of the Capistrano and Cieneba associations, and rock outcrops of the Cieneba complex (USDA, 1978). Soils in the Capistrano association are typically well drained, gently to moderately sloping, and form in granitic alluvium of the coastal foothills. They have slow to medium runoff, a moderate erosion hazard, and are found in narrow areas in small valleys. Soils in the Cieneba association consist of excessively drained, moderately steep and form in material weathered from granitic rocks and sandstone. They are found along ridgetops, and are described with rapid runoff and a high erosion hazard.

According to the California Regional Water Quality Control Board - San Diego Region (SDRWQCB, 1994), the site lies within the Upper San Juan Hydrologic Subarea of the San Juan Hydrologic Unit. In general, groundwater in this area has been designated as beneficial for domestic/municipal, agricultural, and industrial uses. Groundwater levels in the vicinity of the site are seasonally variable, but generally occur at between 10 and 100 feet bgs.

The Upper San Juan Hydrologic Subarea is located within the San Juan Creek watershed. San Juan Creek (immediately west of the site), Verdugo Canyon (north of the site), and Bell Canyon (northwest of the site) are the major drainages within this watershed. According to the SDRWQCB, the drainages within this watershed are exempt from municipal use, but have been designated as beneficial for agricultural, industrial, warm water habitat, cold water habitat, wildlife habitat, and recreational 1 and 2.

5.2 User Provided Information

To assist EEI in the completion of the VES, Mr. Sam Couch, with RMV, completed a Vapor Encroachment Screen - User Questionnaire (**Appendix H**). The questionnaire provided basic information regarding the use, condition, and proposed development of the subject property.

According to Mr. Couch, buildings are proposed to be constructed on the property and the type of construction is pending. Mr. Couch stated that the type of proposed fuel energy used at the property will be natural gas and electric. According to Mr. Couch he does not know of any reported instances of gas stations, cleaners, odors, chemicals, or health concerns reported on the property. He stated that there are existing and/or proposed ASTs/USTs on the property. He added that there will be sensitive receptors (i.e. children, elderly people) that will occupy the property.

5.3 Tier 1 Screening – Search Distance Test/Chemicals of Concern

A Tier 1 Screening includes the search distance test that involves a review of the regulatory database report and available historical records obtained during the Phase I ESA process to make a determination if any *known or suspect potentially contaminated* properties exist within the Area of Concern (AOC). High risk sites are typically current and former gas stations, former and current dry cleaners, manufactured gas plants, and industrial sites (Brownfields). The AOC is defined as any up gradient sites within the ASTM E1527-13 standard search distances and any cross or down gradient sites within 1/3 mile for solvents and petroleum products.

If the contamination at the known or potentially contaminated sites within the AOC consists of Chemicals of Concern (COCs), then a potential Vapor Encroachment Condition (pVEC) exists, and a Tier 2 Screening evaluation is recommended. If no known or potentially contaminated sites with COCs exist within the AOC, no further inquiry is necessary.

Based on EEI's Tier 1 Screening evaluation, no sites were identified within the AOC that were considered to pose a pVEC at the subject property.

5.4 Findings

Based on the results of the Tier 1 VES, EEI concluded that a pVEC can be ruled out, because a pVEC does not or is not likely to exist due to the lack of known or suspected contaminated properties within the Area of Concern (AOC).

6.0 LIMITED AGRICULTURAL CHEMICAL SURVEY

The subject property has been and continues to be utilized for agricultural purposes including a tree nursery and grazing land. It is likely that restricted agricultural chemicals were applied to subject property soils, which is a potential REC. Based on the future planned property use (residential), additional investigation efforts (i.e., soil sampling and analysis) were performed by EEI to further evaluate subject property soils for agricultural chemicals.

There is no specific guidance regarding the testing and analysis of residual pesticides in near-surface soils at proposed residential development sites in Orange County. Therefore, EEI relied principally on the Department of Toxic Substance Control's (DTSC) August 2008 "Interim Guidance For Sampling Agricultural Properties", combined with our experience gathered over the last two decades.

The DTSC document provides guidance for sampling of former agricultural properties (undisturbed) where pesticides and/or fertilizers were presumably applied uniformly, for agricultural purposes, consistent with normal application practices. The DTSC document was initially prepared for use in evaluating soil at proposed new school sites and existing schools undergoing expansion projects where the property was currently or previously used for agricultural activities, but has been expanded to provide a uniform and streamlined approach for evaluating agricultural properties.

Based on the size and configuration of the property, and EEI's experience at similar sites, a total of 20 discrete soil samples were collected at near-surface (0.5 to 2-feet below grade) locations on the subject property. The following sections discuss our investigation activities.

6.1 Field Investigation

The sampling program was performed on March 6, 2014 using a hand auger to obtain soil samples at depths of approximately 0.5 feet and 2 feet below ground surface (bgs) (**Figure 3**). The deeper samples were collected as a means of assessing soil below the 0.5 foot interval in potential cases where the 0.5 interval exceeded health based screening levels. A total of 10 discrete locations, generating 20 samples identified as P4-1 through P4-10, were sampled. The areas targeted included the pasture area formerly used as agricultural fields (samples P4-1 through P4-3) and the RJO Horse Ranch/Tree of Life Nursery (samples P4-4 through P4-10). Sample material was extracted from the ground and placed into laboratory-supplied, 4-ounce glass jars. Each jar was sealed with a Teflon-lined cap and labeled with a number unique to the sample. The samples were placed in a chilled cooler and subsequently delivered via courier to American Analytics, a California State-certified laboratory, under Chain-of-Custody documentation.

6.2 Laboratory Analytical Testing

A total of 10 discrete soil samples were collected during this investigation and were analyzed for Organochlorine Pesticides by EPA Test Method 8081A and for total arsenic and total lead by EPA Method 6020. None of the samples collected from a depth of 2 feet were analyzed. The following bulleted items summarize the results of the laboratory analytical testing:

- No Organochlorine Pesticides associated with EPA Test Method 8081A were reported above detection limits.

- Total lead was reported in 8 samples and total arsenic in all 10 samples. The maximum reported concentrations were: Total lead, 8.7 milligrams per kilogram (mg/kg) in sample P4-10-0.5; Total arsenic, 4.8 mg/kg in sample P4-6-0.5.

Table 4 summarizing the laboratory analytical results as well as the ccomplete laboratory reports and COC documentation are provided in **Appendix I**.

6.3 Discussion of Testing Results

EEI compared the reported analyte concentrations to the Office of Environmental Health Hazard Assessment soil screening numbers, residential scenario (OEHHA, 2010), and to a 2008 DTSC study of southern California school sites determining a background arsenic concentration of 12 mg/kg (DTSC 2008). Of the five reported analytes, only lead occurred at values exceeding the OEHHA screening value. Arsenic is unique by the fact that ambient concentrations typically exceed the OEHHA value of 0.07 mg/kg by a factor of 100 or more (DTSC, 2008). To augment the impractical value, a 2008 study by DTSC was referenced which examined proposed school sites in southern California. DTSC determined that the ambient concentration of arsenic was 12 mg/kg and accordingly this value was referenced by EEI for comparison purposes. Below is a listing of the maximum detected concentration relative to its respective OEHHA or DTSC value:

- Total lead at a reported maximum of 8.7 mg/kg compares to the OEHHA value of 80 mg/kg;
- Total arsenic at a reported maximum of 4.8 mg/kg compares to the DTSC value of 12 mg/kg;

The maximum total lead concentration of 8.7 mg/kg, detected in soil sample P4-10-0.5, does not exceed the OEHHA screening level of 80 mg/kg. The maximum total arsenic concentration of 4.8 mg/kg, detected in soil sample P4-6-0.5, does not exceed the background concentration of 12 mg/kg established by DTSC, indicating that none of the analyzed samples exceeded acceptable background conditions for sites occupied by children in the study region. No additional investigation appears to be necessary at this time.

7.0 FINDINGS AND OPINIONS

Based on the information obtained in this ESA, EEI has the following findings and opinions:

- *Known or suspected RECs* – are defined by the ASTM Standard Practice E 1527-13 as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

  The following *known or suspected RECs* have been revealed during the preparation of this ESA:

  - The subject property has been utilized for agricultural purposes (i.e., nursery). Additional investigation efforts (i.e., soil sampling and analysis) were performed by EEI to further evaluate subject property soils for agricultural chemicals. The results of our agricultural chemical survey revealed no concentrations of select organochlorine pesticides in site soils. The maximum total lead concentrations were below the residential screening value and maximum total arsenic concentrations were within acceptable background levels. Therefore, further investigation does not appear to be warranted at this time. No additional investigation appears to be necessary at this time.

- *Controlled RECs (CRECs)* – are defined by the ASTM Standard Practice E 1527-13 as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (e.g., as evidenced by the issuance of a NFA letter or equivalent, or meeting risk-based criteria established by regulatory authority), with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls)

  No *CRECs* have been revealed during the preparation of this ESA.

- *Historical Recognized Environmental Conditions (HRECs)* – are defined by the ASTM Standard Practice E 1527-13 as a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted residential use criteria established by a regulatory authority, without subjecting the property to any required controls (e.g., property use restrictions, AULs, institutional controls, or engineering controls).

  No *HREC's* has been revealed during the preparation of this ESA.

- *De minimis* Conditions – include environmental concerns identified which may warrant discussion but do not qualify as RECs, as defined by the ASTM Standard Practice E 1527-13.

  No *de minimis* conditions were identified during the preparation of this ESA.

8.0 DATA GAPS AND DEVIATIONS FROM ASTM PRACTICES

Section 3.2.20 (ASTM 1527-13) defines a data gap as "a lack or inability to obtain information required by the practice despite good faith efforts of the environmental professional to gather such information."

8.1 Historical Data Gaps

Based on the information obtained during the course of this investigation, no historical data gaps were encountered.

8.2 Regulatory Data Gaps

Based on the information obtained during the course of this investigation, no regulatory data gaps were encountered.

8.3 Onsite Data Gaps

Based on the information obtained during the course of this investigation, no onsite data gaps were encountered.

8.4 Deviations from ASTM Practices

Section 12.10 (ASTM 1527-13), states that all deletions and deviations from this practice shall be listed individually and in detail, including Client imposed constraints, and all additions should be listed.

EEI believes that there are no exceptions to, or deletions from, the ASTM Designation E1527-13 Guidelines.

9.0 CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the property identified as RMV PA4 (1,460-acres), the *subject property*. Any exceptions to, or deletions from, this practice are described in Section 8.0 of this report. This assessment has revealed no evidence of *recognized environmental conditions* in connection with the *subject property*, except for those discussed in Section 7.0 Findings and Opinions.

10.0 REFERENCES

California Division of Mines and Geology (CDMG), 2002 California Geological Survey, California Geomorphic Provinces Note 36, Electronic Copy, Revised December 2002.

California Department of Toxic Substances (DTSC), Website (http://www.envirostor.dtsc.ca.gov/public/), EnviroStor database, accessed November 2014.

California Department of Water Resources, Water Data Library (WDL), Website (http://www.water.ca.gov/waterdatalibrary), accessed November 2014.

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Permits: PA140072 (PA3 & PA4 Addendum)

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RESUME OF ENVIRONMENTAL PROFESSIONAL

Permits: PA140072 (PA3 & PA4 Addendum)

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Permits: PA140072 (PA3 & PA4 Addendum)

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OCCUPANT/TENANT AND USER INTERVIEW QUESTIONNAIRES

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

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PHOTOGRAPHIC LOG

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Permits: PA140072 (PA3 & PA4 Addendum)

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County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX E

CONCEPTUAL WATER QUALITY MANAGEMENT PLAN FOR PLANNING AREAS 3 AND 4

REVIEWED FOR CODE COMPLIANCE

THESE PLANS AND DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN COMPLIANCE WITH THE APPLICABLE JURISDICTION CODE REQUIREMENTS. ISSUANCE OF A PERMIT IS RECOMMENDED SUBJECT TO APPROVAL BY OTHER DEPARTMENTS AND ANY NOTED CONDITIONS. THIS APPROVAL DOES NOT RELIEVE THE ENGINEER OF RECORD OF THEIR RESPONSIBILITY TO PREPARE THE PLANS, SPECIFICATIONS, MAPS, AND OTHER RECORD DOCUMENTS PER CURRENT CODES AND APPLICABLE STANDARDS OF PRACTICE.

ATKINS NORTH AMERICA, INC.

Signature: PA140072

March 03, 2015
Date:

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

Prepared for

RMV Community Development, LLC
P.O. Box 9
San Juan Capistrano, CA 92693

Conceptual Master Area Plan

Water Quality Management Plan

The Ranch Plan Planning Area 3 and 4 (PA140072-81)

Prepared by

14725 Alton Parkway
Irvine, California 92618

February 25, 2015

Subsequent clarifications regarding the number and location of water quality basins, flood control basins, and outlets, will be incorporated into the Subarea Scale WQMP required to address the unique mitigation measures as defined by the FEIR for the project, to be prepared prior to approval of each Master "A" Tentative Tract Map, which will also be detailed in applicable Final WQMPs prepared prior to issuance of any precise grading and/or building permit.

CONCEPTUAL MASTER AREA PLAN

WATER QUALITY MANAGEMENT PLAN (WQMP)

For:

Permits: PA140072 (PA3 & PA4 Addendum)

The Ranch Plan
Planning Area 3 and 4
(PA140072-81)

Prepared for:

RMV Community Development, LLC

P.O. Box 9
San Juan Capistrano, CA 92693
(949) 240-3363

Prepared by:

RBF Consulting, a Company of Michael Baker Corporation

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Preparer:
Daniel Apt, CPSWQ
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tchen@rbf.com
Jon Kazarian, E.I.T.
Jonathan.Kazarian@rbf.com

February 25, 2015

Project Owner's Certification			
Planning Application No. (If applicable)	PA140072 ;PA140073 – 140081 ; ST140018 & ST140019	Grading Permit No.	N/A
Tract/Parcel Map and Lot(s) No.	N/A	Building Permit No.	N/A
Address of Project Site and APN	PA3 : 125-161-93 ;125-161-91 ;125-161-30 ;125-161-04 ;125-161-03 PA4 :125-161-01 ;701-150-47 ;701-150-20 ;701-150-42 ;701-150-44 ;701-150-55 ;701-150-64 ;701-150-66 ;701-150-65 ;701-150-73 ;701-150-68		

This Water Quality Management Plan (WQMP) has been prepared for RMV Community Development, LLC by RBF Consulting, a Michael Baker International Company. The WQMP is intended to comply with the requirements of the County of Orange NPDES Stormwater Program requiring the preparation of the plan.

The undersigned, while it owns the subject property, is responsible for the implementation of the provisions of this plan , including the ongoing operation and maintenance of all best management practices (BMPs), and will ensure that this plan is amended as appropriate to reflect up-to-date conditions on the site consistent with the current Orange County Drainage Area Management Plan (DAMP) and the intent of the non-point source NPDES Permit for Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the incorporated Cities of Orange County within the San Diego Region. Once the undersigned transfers its interest in the property, its successors-in-interest shall bear the aforementioned responsibility to implement and amend the WQMP. An appropriate number of approved and signed copies of this document shall be available on the subject site in perpetuity.

Owner: Richard M. Broming			
Title	Senior Vice President, Planning & Entitlement		
Company	RMV Community Development, LLC		
Address	P.O. Box 9, San Juan Capistrano, CA 92693		
Email	RBroming@ranchomv.com		
Telephone #	(949) 240-3363		
I understand my responsibility to implement the provisions of this WQMP including the ongoing operation and maintenance of the best management practices (BMPs) described herein.			
Owner Signature		Date	

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

Preparer (Engineer):			
Title	Terrence Chen	PE Registration #	72085
Company	RBF Consulting, a Michael Baker International Company		
Address	14725 Alton Parkway, Irvine, CA 92618		
Email	TCHEN@mbakerintl.com		
Telephone #	949-855-3666		

I hereby certify that this Water Quality Management Plan is in compliance with, and meets the requirements set forth in, Order No. R9-2009-0002/NPDES No. CAS0108740, of the San Diego Regional Water Quality Control Board.

Preparer Signature	Terrence Chen	Date	2/25/15
Place Stamp Here	REGISTERED PROFESSIONAL ENGINEER TERRENCE CHEN No. 72085 Exp. 6/30/16 CIVIL STATE OF CALIFORNIA		

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Attachment 4: SOHM

Attachment 5: Master Area Plan

Section I Discretionary Permit(s) and Water Quality Concerns

On November 8, 2004, the Orange County Board of Supervisors (Board of Supervisors) approved a General Plan Amendment (Resolution No. 04-291), Zone Change (Resolution No. 04-292 and Ordinance No. 04-014), and Development Agreement (Resolution No. 04-293 and Ordinance No. 04-015) for the remaining 22,815 acres of the Rancho Mission Viejo. Commonly identified as the Ranch Plan (or Alternative B-10 Modified), the approved project established a blueprint for the long-term conservation, management, and development of the large-scale southern Orange County landholding. Concurrent with the foregoing approvals, the Board of Supervisors adopted Resolution No. 04-290, certifying Program Environmental Impact Report No. 589 (the Ranch Plan EIR) as complete, adequate, and in full compliance with the requirements of the California Environmental Quality Act (CEQA) and the State CEQA Guidelines.

On December 8, 2004, the City of Mission Viejo (City) and a coalition of concerned environmental groups (the Resource Organizations) filed separate actions in the Orange County Superior Court challenging the Board of Supervisor's approval of the Ranch Plan and its certification of the Ranch Plan EIR. In relevant part, the individual actions raised questions concerning (1) potential local and regional transportation impacts associated with implementation of the Ranch Plan and (2) the appropriate/desired scope of biological resource protection to be implemented within the bounds of the Ranch Plan project area. Following a series of meetings and negotiations between representatives of the County, the City, the applicant, and the Resource Organizations, the parties reached a settlement for all of the outstanding issues on June 9, 2005 (City) and August 16, 2005 (Resource Organizations), respectively, with dismissal of the individual lawsuits following thereafter.

The terms of the individual settlements were memorialized in separate agreements executed by and between the parties on the identified dates. Notably, the provisions of the August 16, 2005 settlement agreement (Resource Organizations) resulted in certain refinements to the Ranch Plan that, in effect, increased the amount of open space that will be permanently protected and managed (from approximately 15,132 acres to 16,942 acres) and reduced the amount of acreage available for development activities (from approximately 7,683 acres to 5,873 acres). Informally known as "Alternative B-12," the refined Ranch Plan program was further influenced by input received from the public, the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the U.S. Fish and Wildlife Service (USFWS). Alternative B-12 focuses on further protection of resources by concentrating development in the areas with lower biological resource values while continuing to protect high resource values, including the vast majority of the western portion of the San Mateo Creek Watershed within the Ranch Plan Planning Area. At the same time, Alternative B-12 provides the same level of housing and nonresidential development as previously approved for the B-10 Modified Alternative. The B-12 Alternative was subsequently approved by the USFWS, USACE and CDFG in their approval of the Southern Subregion Habitat Conservation Plan (SSHCP) and its associated

Incidental Take Permit (ITP), the Special Area Management Plan and its associated Long Term Individual 404 Permit and the Master Streambed Alteration Agreement (MSAA) respectively.

As part of its certification of the adequacy of the Final Program Environmental Impact Report No. 589 for the Ranch Plan, the Board of Supervisors adopted a Mitigation Monitoring and Reporting Program (MMRP) which contains the mitigation program that was incorporated through preparation of the Program EIR and response to comments during the public review process. The mitigation program identified Project Design Features (PDFs), Standard Conditions (SCs), and Mitigation Measures (MMs) as necessary strategies to reduce potential adverse environmental impacts.

A Conceptual WQMP was prepared in support of the General Plan Amendment and Zone Change (GPA/ZC) application (Geosyntec, 2004). This earlier Conceptual WQMP was an appendix to Draft Program Environmental Impact Report No. 589 (State Clearinghouse Number 2003021141), dated June 10, 2004. This Conceptual WQMP was approved in conjunction with the certification of the Final Program EIR. The Conceptual WQMP was the first of four levels of WQMP preparation. These levels include the Conceptual WQMP, the Master Area Plan WQMP, the Sub-Area Plan WQMP, and the final project-specific WQMP. This WQMP is the Conceptual Master Area Plan WQMP. The Conceptual WQMP set the framework for the future levels of WQMP preparation. This Conceptual Master Area Plan WQMP for Planning Area (PA) 3 and 4 has been prepared consistent with the terms and content of the Conceptual WQMP.

The Ranch Plan is considered a new development "Priority Development Project" (PDP) as defined by the County of Orange Model WQMP. The requirements outlined within this WQMP are intended to comply with local and regional permit requirements by providing a framework for Sub-Area WQMPs and future Project Specific WQMPs within PA 3 and 4.

This Conceptual Master Area Plan WQMP has also been prepared to satisfy Condition C.2 of the RMV Long Term Individual 404 Permit and in support of RMV's application for Letter of Permission consistent with the Long Term Permit. This application has also been prepared to support RMV's application for a 401 Certification from the SDRWQCB for PA 3 and PA 4.

Subsequent to the overall Ranch Plan approvals and settlements, the next sequential step in the planning and entitlement process is discretionary approvals for area plans and subsequent site development and subdivision activities for each development planning area. The proposed PA 3 and PA 4 Master Area Plans provide a process to demonstrate that the intent of conceptual development policies contained in the General Plan and the Ranch Plan Zoning approvals will be implemented through more precise discretionary measures. The Area Plan process for the Ranch Plan is divided into two levels, a Master Area Plan and Subarea Plan. The Master Area Plan focuses on each Planning Area in its entirety and addresses topics and issues on a regional basis (It is important to note that Conditions of Approval are still being developed for the Master Area Plan and have not yet

been applied). The Subarea Plans focuses on specific segments of each Planning Area. Eight Subarea Plans for PA 3 and one Subarea Plan for PA 4 will focus on individual segments of the planning area including community level topics and issues. For purposes of this WQMP these nine Sub-Areas have been aggregated into six Sub-drainage Areas: A, B, C, D, E and F. The locations for each of the Sub-Areas and Sub-drainage Areas are shown on Figure 3 in Section VI.

On March 13, 2014, the San Diego Regional Water Quality Control Board deemed the mitigative water quality and hydromodification management scheme detailed in FEIR 589, the Ranch Plan Planned Community Runoff Management Plan (ROMP) and the San Juan Creek Watershed Study acceptable. The project is proceeding and being reviewed on the basis of this approval.

Section II Project Description

The Ranch Plan project site consists of 22,815 acres in unincorporated south Orange County. The project site includes area of the remaining undeveloped portions of the Rancho Mission Viejo (RMV) property. The planned community of Ladera Ranch and the cities of Mission Viejo, San Juan Capistrano, and San Clemente surround the project site on the west. The City of Rancho Santa Margarita bounds the northern edge of the project site and the southern edge is bound by the Marine Corps Base (MCB) Camp Pendleton in San Diego County. Caspers Wilderness Park and the Cleveland National Forest bound the project site on its eastern edge.

This Conceptual Master Area Plan WQMP includes relevant information and requirements pertaining to PA 3 and PA 4 of the Ranch Plan. The 2,171-acre PA 3 is located north of Ortega Highway, east of Antonio Parkway, the planned community of Ladera Ranch and a portion of The Reserve at Rancho Mission Viejo (Ladera Open Space), south of Oso Parkway and Tesoro High School and east of PA 2. The 1,531-acrea PA 4 is located southeast of San Juan Creek and south of PA 3. Cañada Gobernadora is located west of PA 3. Cañada Gobernadora flows in a southerly direction through the PA 3 to confluence with San Juan Creek. San Juan Creek, which is a dominant physical feature extending northeast and southwest through the larger Ranch Plan Planned Community, is located south of PA 3 and PA 2 and north of PA 4. Proposed developed for both PA 3 and PA 4 include residential, commercial, institutional, open space, recreational and industrial lots.

Potential Pollutants of Concern

Pollutants of concern for PA 3 and PA 4 are those pollutants that are anticipated or potentially could be generated based on past and proposed land uses and site activities. These pollutants have been identified by regulatory agencies as potentially impairing beneficial uses in the receiving water by adversely affecting receiving water quality or endangered species. Table 1 summarizes the anticipated and potential pollutants of concern generated by different land use types. This table was obtained from the 2011 Orange County Technical Guidance Document (OC TGD).

Table 1: Anticipated and Potential Pollutants Generated by Land Use Type

Priority Project Categories and/or Project Features	General Pollutant Categories							
	Suspended Solid/Sediments	Nutrients	Heavy Metals	Pathogens (Bacteria/Virus)	Pesticides	Oil & Grease	Toxic Organic Compounds	Trash & Debris
Detached Residential Development	E	E	N	E	E	E	N	E
Attached Residential	E	E	N	E	E	E[(2)]	N	E
Commercial/Industrial Development	E[(1)]	E[(1)]	E[(5)]	E[(3)]	E[(1)]	E	E	E
Automotive Repair Shops	N	N	E	N	N	E	E	E
Restaurants	E[(1)(2)]	E[(1)]	E[(2)]	E	E[(1)]	E	N	E
Hillside Development >5,000 ft^2	E	E	N	E	E	E	N	E
Parking Lots	E	E[(1)]	E	E[(4)]	E[(1)]	E	E	E
Streets, Highways, and Freeways	E	E[(1)]	E	E[(4)]	E[(1)]	E	E	E
Retail Gasoline Outlets	N	N	E	N	N	E	E	E

E = expected to be of concern
N = not expected to be of concern
(1) Expected pollutant if landscaping exists on-site, otherwise not expected.
(2) Expected pollutant if the project includes uncovered parking areas, otherwise not expected.
(3) Expected pollutant if land use involves food or animal waste products, otherwise not expected.
(4) Bacterial indicators are routinely detected in pavement runoff.
(5) Expected if outdoor storage or metal roofs, otherwise not expected.

Potential pollutants of concern for PA 3 and PA 4 include:

- Pathogens (Bacteria and Viruses)
- Toxic Organic Compounds
- Sediment (Total Suspended Solids)
- Nutrients
- Heavy Metals (Aluminum, Cadmium, Copper, Lead, and Zinc)
- Hydrocarbons (Oil and Grease, Polycyclic Aromatic Hydrocarbons or PAHs)
- Pesticides
- Trash and Debris
- Chlorine

Offsite flows from PA 4 will be directed into a debris basin and will outlet into a storm drain that will bypass the infiltration basins and directly discharge into San Juan Creek. Currently, no offsite flows are draining onto PA 3.

The County of Orange Local WQMP includes two additional categories of pollutants of concern – organic compounds and oxygen-demanding compounds. The pollutants in these two categories include pollutants in the categories above. For example, typical organic compounds in urban runoff include pesticides, petroleum hydrocarbons, and vegetative debris. Oxygen-demanding substances typical in urban stormwater runoff are included in trash and debris, such as biodegradable food and vegetation waste. Chemical oxygen-demanding compounds, such as ammonia, are included in the nutrient category.

Hydrologic Conditions of Concern

Increases in impervious area throughout the development can potentially impact the hydrologic regime of downstream receiving water bodies. These impacts are considered a Hydrologic Condition of Concern if the project improvements pose significant threats to natural channels or habitat integrity. Because this project is a PDP, Hydrologic Conditions of Concern have been assessed for the Planning Area 3 and 4 Master Area WQMP in accordance with the Hydromodification Criteria contained within the South Orange County Hydromodification Management Plan[1] (HMP) that was developed based on the HMP

[1] The South Orange County HMP was submitted on December 16, 2011 and comments were received on April 25, 2012 tentatively approving the sections of the HMP that would likely be included in the Final HMP. The HMP was resubmitted on October 25, 2012 with specific exemptions included. Comments were received from the Regional Board via a letter to the County of Orange on July 31, 2013 which directed the County to remove the exemptions that were not specifically identified in the MS4 Permit (Order No. R9-2009-002). Subsequently the County of Orange has engaged in negotiations with the San Diego Regional Board Staff to

requirements in Order No. R9-2009-0002. The hydromodification control requirements identified in the South OC HMP necessitate the comparison between the pre-development (naturally occurring) and post-project duration and flow rates, this can be done using a continuous simulation hydrologic model (i.e. the US EPA's Hydrograph Simulation Program-Fortran, or HSPF). The performance criteria identified in the South OC HMP are as follows:

- All PDPs must use continuous simulation to ensure that post-project runoff flow rates and durations for the PDP shall not exceed pre-development, naturally occurring, runoff flow rates and durations by more than 10% for peak flow rates, from 10% of the 2-year runoff event up to the 10-year runoff event.

Projects are exempt from the interim hydromodification criteria where the project meets one of the following criteria:

- Discharges storm water runoff into underground storm drains discharging directly to a bay or the ocean.

- Discharges storm water runoff into conveyance channels whose bed and bank are concrete lined all the way from the point of discharge to ocean waters, enclosed bays, estuaries, or water storage reservoirs and lakes.

According to Section 15 of the RMV ROMP (Pace; approved in April 2013), portions of San Juan Creek qualify for hydromodification exemption. The ROMP, that has been approved, includes an exemption for discharges that are conveyed directly to the 10-year flood plain. The southern portions of PA 3 and southwestern portions of PA 4 that drain directly into San Juan Creek, specifically Sub-drainage Area A, B, C, E and F will be exempt from hydromodification requirements because of the RMV ROMP hydromodification exemption. BMP improvements to address hydromodification requirements will be implemented in Sub-Drainage Area D and are discussed in detail in Section IX of the WQMP. Figure 3 in Section VI depicts the locations for each drainage area.

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work out a resolution to the exemptions issue. An agreement has been reached between the County and the Regional Board staff to include interim exemptions in the San Diego Regional Permit via Tentative Order R9-2015-0001, which is scheduled to be adopted in early 2015. An exemption letter tacitly approved by the San Diego Regional Board, per the Regional Board comment letter dated March 13, 2014, can be found in Attachment 2 in this document.

Post development drainage characteristics

Post development drainage characteristics for PA 3 and PA 4 are segregated into six Sub-drainage Areas, Sub-drainage Area A, B, C, D, E and F. Sub-drainage Area A, located in the southern portion of PA 3, contains a commercial, retail, school and residential area. A water quality basin will be located near the southern portion of drainage area A in order to convey runoff prior to discharge into San Juan Creek to provide treatment and runoff attenuation. Energy dissipaters shall be included whenever concentrated flow is discharged into natural streams. San Juan Creek traverses south and confluences with Gobernadora Canyon, which ultimately discharges to the Pacific Ocean.

Sub-drainage Area B is located in the middle portion of PA 3 where Sub-drainage Area C is located in the southeast portion of the Planning Area. Runoff from these areas is conveyed through local storm drain systems that traverse southward towards San Juan Creek. Both Sub-drainage Areas drain to infiltration basins before discharging into San Juan Creek and ultimately the Pacific Ocean.

Sub-drainage Area D is located in the northerly portion of PA 3. Runoff from this Sub-drainage Area is anticipated to connect to a local storm drain on "C" Street prior to discharging into Basin D. Additionally, the bridge that connects PA 2 and PA 3 on "A" Street is expected to slope towards PA 3. This runoff has been accounted for in the sizing of Basin D. Basin D will be sized for hydromodification and Low Impact Development (LID) requirements as it is not part of the RMV ROMP exemption because it will discharge into Gobernadora Canyon and eventually the Pacific Ocean.

Sub-drainage Area E is located in the north portion of PA 4 and is comprised of residential and industrial development. The area is located north of Cow Camp Road. Sub-drainage Area E is the smallest sub-area in PA 4 with a total acreage of 60 acres. Runoff from area E is conveyed into an infiltration basin prior to being discharged into San Juan Creek.

Sub-drainage Area F is located in the southern portion of PA 4 and is comprised of industrial and office development. Access to sub-drainage area F is provided from Cow Camp Road, which is north of the area. Sub-drainage Area F is the largest sub-area in the Planning Area with a total acreage of 67 acres. Runoff from area F is conveyed into an infiltration basin prior to being discharged into San Juan Creek. The infiltration basin is located north west of area F, adjacent to San Juan Creek.

The drainage patterns have not yet been developed as the land plan has yet to be developed for PA 3 and PA 4. A rough grading provided for each Sub-drainage Area will give insight to where each Sub-Area is draining to. However, local storm drains have not been developed for PA 3 and PA 4.

Property Ownership/Management

RMV Community Development, LLC owns the land on which the Ranch Plan project site is located. A Master Homeowners Association (HOA) will be formed for PA 3 and PA 4 in addition to separate HOAs as necessary. The HOAs or another designated entity will be responsible for the inspection and maintenance of most of the structural BMPs. Until the HOAs or other applicable designated entities are established, the developer is responsible for the operation and maintenance of the BMPs within the project area which are not designated to the County. The County will be responsible for those BMPs that only serve the public roadway areas. The County is anticipated to inspect and maintain all of the public roads, regional trails, and storm drain infrastructure throughout the Planning Area.

Section III Site Description

Planning Area 3 and Planning Area 4 Project Areas and Land Uses

Portions of PA 3 and PA 4 have been used for agricultural uses for the past 120 years. A portion of these uses continue today; however, many of the agricultural uses have been removed. Existing non-residential land uses within PA 3 and 4 include avocado and citrus production areas and barley fields. There are several unpaved ranch roads located within the Planning Areas.

Cow Camp Road is designated on the Master Plan of Arterial Highways (MPAH) as a future roadway that will begin at Antonio Parkway, north of San Juan Creek, and extend to the east ultimately connecting to Ortega Highway. The roadway will be implemented in phases throughout the development of the Ranch Plan.

As previously mentioned, just north of Ortega Highway, San Juan Creek flows in an east-west direction. San Juan Creek is a major drainage facility that discharges into the Pacific Ocean in the vicinity of the City of Dana Point. Major tributaries to San Juan Creek are Arroyo Trabuco, Oso Creek, Cañada Chiquita, Cañada Gobernadora, Bell Canyon Creek, and Verdugo Canyon Creek. Cañada Gobernadora is located within Planning Area 3. The Ranch Plan Planned Community contains a diverse population of flora and fauna species, including sensitive vegetation communities that provide habitat to sensitive species. These vegetation communities include, but are not limited to, scrub habitats, chaparral, vernal pools and seeps, riparian habitat, and woodland habitat. Vegetation communities that occur in PA 3 and PA 4 include coastal sage scrub, chaparral, grassland, open water, freshwater marsh, alkali meadow, stream courses, riparian habitat, and oak woodland and forest.

PA 3 is approximately a 2,171 acre development under the Planning Area Master plan located north of San Juan Creek and east of Canada Gobernadora. The watershed elevations range from approximately 213’ above sea level at San Juan Creek to approximately 870’ above sea level along the eastern watershed ridge. All calculations for PA 3 include the urban developed areas and exclude all natural existing land.

PA 4 study area encompasses approximately 1,531 acres that is located east of San Juan Creek and south of Verdugo Canyon. The water shed elevations range from approximately 286’ above sea level at San Juan Creek to approximately 1054’ above sea level along the southern watershed ridge. Because PA 4 encompasses a lot of natural land, a dual piping system will be implanted. One pipe network will carry all natural runoff into San Juan Creek and the other will account for all urban runoff and will drain to the infiltration basins. All calculations for PA 4 include the urban developed areas and exclude all natural existing land.

As noted previously, for purposes of this WQMP these eight Sub-Area Plans have been aggregated into four Sub-Drainage Areas for PA 3 and one Sub-Area Plan has been split into two Sub-Drainage Areas for PA 4.

Sub-drainage Area Land Uses

Sub-drainage Area A Land Use Plan

- Sub-drainage Area A is located in the southern portion of the Planning Area and is comprised of residential, mixed-use development and schools. This Sub-drainage Area is located just north of Cow Camp Road, east of Cañada Gobernadora and south of Cow Camp Road.
- The total acreage of Sub-drainage Area A is 583 acres.
- F and A Street provide access to Sub-drainage Area A from the east and southern directions respectively.

Sub-drainage Area B Land Use Plan

- Sub-drainage Area B is located in the central portion of PA 3 and is comprised of residential and commercial use development. This Sub-drainage Area is located just north of Cow Camp Road, and east of Cañada Gobernadora. F Street traverses along the western and eastern edge of Sub-drainage Area B.
- Sub-drainage Area B is comprised of a total acreage of 497 acres.
- F Street provides access to Sub-drainage Area B from the west. Access from the east and northern portions of the subarea is provided by E Street. Cow Camp Road provides direct access to the southern portion of the subarea.

Sub-drainage Area C Land Use Plan

- Sub-drainage Area C is located in the southeast portion of PA 3 and is comprised of residential and mixed-use development. This Sub-drainage Area is located just east of F Street and north of Cow Camp Road.
- Sub-drainage Area C is the smallest subarea in PA 3 with a total acreage of 335 acres.
- Access to Sub-drainage Area C is provided from Cow Camp Road in the southeast and residential streets from all other directions.

Sub-drainage Area D Land Use Plan

- Sub-drainage Area D is located in the north portion of PA 3 and is comprised of residential and mixed-use development. The area is located adjacent to A Street bridge and PA 2. Sub-drainage Area D is the largest sub-area in the Planning area with a total acreage of 773 acres.

Sub-drainage Area E Land Use Plan

- Sub-drainage Area E is located in the north portion of PA 4 and is comprised of residential and industrial development. The area is located north of Cow Camp Road. Sub-drainage Area E is the smallest sub-area in PA 4 with a total acreage of 60 acres.
- Access to Sub-drainage Area E is provided from Cow Camp Road.

Sub-drainage Area F Land Use Plan

- Sub-drainage Area F is located in the southeastern portion of PA 4 and is comprised of industrial and office development. Access to sub-drainage area F is provided from Cow Camp Road, which is north of the area. Sub-drainage Area F is the largest sub-area in the Planning Area with a total acreage of 67 acres.

Roadways and Trails

Six major roadways are adjacent to and/or traverse PA 3 and extend beyond the development boundaries. These include, Cow Camp Road, A Street, B Street, C Street, E Street and Ortega Highway. PA 3 will also include the construction of local residential arterial streets, trails, and bikeways. Ortega Highway and Antonio Parkway are two existing major highways that traverse the Ranch Planning Area and will facilitate PA 3 improvements.

Antonio Parkway

Antonio Parkway, a major arterial located west of the Planning Area, does not traverse PA 3, but it is vital for future transportation demand. Antonio Parkway has been widened to six lanes from the southern edge of the Ladera Ranch Planned Community to Ortega Highway, a length of approximately 1.1 miles.

Cow Camp Road

Cow Camp Road is proposed as an east-west Major Arterial Highway with a 60 miles per hour design speed that will extend from Antonio Parkway to the existing Ortega Highway near the common boundary of Rancho Mission Viejo and Caspers Wilderness Park. A portion of Cow Camp Road is located within PA 3 and PA 4. The preliminary phasing for this section of the road has begun and is anticipated to finish in the early months of 2015.

Ortega Highway

Ortega Highway is not directly connected to PA 3 but as with Antonio Parkway, it serves a vital transportation role for future demand. Caltrans and the County have completed the widening of Ortega Highway, including the approximately 1.1-mile segment from the

western Planning Area 1 boundary to the La Pata Avenue/Antonio Parkway intersection. The Ortega Highway Bridge is one of two bridges that presently cross the San Juan Creek within the RMV reach, which was replaced in 1996 and most recently widened in 2010.

Watershed Description

Physical Setting

The San Juan Creek watershed, located in the southern portion of Orange County, encompasses a drainage area of approximately 176 square miles and extends from the Cleveland National Forest in the Santa Ana Mountains to the Pacific Ocean at Doheny State Beach near Dana Point Harbor. The upstream tributaries of the watershed flow out of steep canyons and widen into alluvial floodplains. The major streams in the watershed include San Juan Creek, Bell Canyon Creek, Chiquita Creek, Gobernadora Creek, Verdugo Canyon Creek, Oso Creek, Trabuco Creek, and Lucas Canyon Creek. Elevations range from over 5,600 feet above sea level at Santiago Peak to sea level at the mouth of San Juan Creek (PCR et al. 2002).

The San Juan Creek watershed is bounded on the north by the Santiago Creek, Aliso Creek, and Salt Creek watersheds and on the south by the San Mateo Creek watershed. The Lake Elsinore watershed, which is a tributary of the Santa Ana River watershed, is adjacent to the eastern edge of the San Juan Creek watershed.

Climatic Conditions

The Mediterranean climate in Southern California is characterized by brief, intense storms between November and March. A majority of the annual precipitation often falls during a few storms in close time proximity to one another. The higher elevation portions of the watershed typically receive significantly greater precipitation due to the effect of the Santa Ana Mountains. In addition, rainfall patterns are subject to extreme variations from year to year and longer-term wet and dry cycles. The combination of steep watersheds, brief intense storms, and extreme temporal variability in rainfall results in systems that must accommodate stream discharge that can vary by several orders of magnitude over very short periods.

Southern California is characterized by wet and dry cycles, typically lasting up to 15 to 20 years. The area appears to be emerging from a wetter-than-normal cycle of years beginning in 1993. Previously, five consecutive years of sub-normal rainfall and runoff occurred in 1987 through 1991. Prior droughts of note include severe droughts in 1976-77 and 1946-51. Previous notable wet periods in the past occurred in 1937-44 and 1978-83. An unusually long period of generally dry years extended from 1945 through 1977. During this period, rainfall was approximately 25% below normal. Both groundwater recharge and sediment transport diminished considerably during this time. Dry conditions were

sufficiently persistent during this period to cause lower groundwater levels and to reduce the size of riparian corridors. Additionally, landslide activity lessened during this period.

The watersheds have been subject to numerous large-scale fires during the past 100 years. Most of these fire events were of human origin. The majority of ignitions have been associated with roadways, arson and person-related activities. Large fire events in the watersheds occurred in 1989, 1961, 1959, 1958, 1952, 1937, 1917 and 1915. The primary effect of fires is a sharp increase in sediment yield and downstream channel aggradation for about 5 years following the burn.

Geomorphology, Terrains, and Hydrology

The following geomorphic, hydrologic, and biological information is summarized from the Baseline Geomorphic and Hydrologic Conditions Report (PCR et al. 2002).

The San Juan Creek watershed is located on the western slopes of the Santa Ana Mountains, which are part of the Peninsular Ranges that extend from the tip of Baja California northward to the Palos Verdes peninsula and Santa Catalina Island.

Three major geomorphic terrains are found within the San Juan Creek watershed: sandy and silty-sandy, clayey, and crystalline. These terrains are manifested primarily as roughly north-south oriented bands of different soil types. The soils and bedrock that comprise the western portions of the San Juan Creek watershed (i.e., Oso Creek, Arroyo Trabuco, and the lower third of San Juan Creek) contain a high percentage of clays. The soils typical of the clayey terrain include the Alo and Bosanko clays on upland slopes and the Sorrento and Mocho loams in floodplain areas.

In contrast, the middle portion of the San Juan basin, (i.e., Cañada Chiquita, Bell Canyon, and the middle reaches of San Juan Creek) is a region characterized by silty-sandy substrate that features the Cieneba, Anaheim, and Soper loams on the hill slopes and the Metz and San Emigdio loams on the floodplains.

The upstream portions of the San Juan Creek watershed, which comprise the headwaters of San Juan Creek, Lucas Canyon Creek, Bell Creek, and Trabuco Creek, may be characterized as a "crystalline" terrain, because the bedrock underlying this mountainous region is composed of igneous and metamorphic rocks. In this portion of the watershed, slopes are covered by the Friant, Exchequer, and Cieneba soils, while stream valleys contain deposits of rock and cobbly sand.

The upland slopes east of both Chiquita and Gobernadora Canyons are unique in that they contain somewhat of a hybrid terrain. Although underlain by deep sandy substrates, these areas are locally overlain by between two and six feet of exhumed hardpan (a cemented or compacted layer in soil that is impenetrable by roots).

Runoff patterns typical of each terrain are affected by basin slope, configuration of the drainage network, land use, vegetation, and, perhaps most importantly, the underlying terrain type. Although all three terrains exhibit rapid runoff, undisturbed sandy slopes contribute less runoff than clayey ones because it is easier for water to infiltrate into the coarser substrate. During low to moderate storm events terrains influence the likelihood and extent of channel migration, avulsion, or incision. However, during extreme storm events, the influence of terrains is minimal.

Geotechnical Considerations

Detailed geotechnical evaluations are imperative for appropriate BMP selection. Soil types, infiltration rates, ground water, and slope stability are just a few important considerations that will need to be determined and accounted for during BMP selection and design. According to Natural Resources Conservation Service (NRCS) mapping data, PA 3 contains a range of different soil types with varying infiltration characteristics. Estimating infiltration characteristics using the United States Department of Agriculture (USDA) hydrologic soil group classification is based upon estimated runoff potential related to soil properties that influence runoff. Soils are classified into hydrologic soil groups, A, B, C, or D, depending upon infiltration rates measured when the soils are thoroughly wet. A-type soils have the highest infiltration rates while D-type soils have the lowest infiltration potential. In general, Type A soils contain a higher proportion of coarser textures (sand and gravel) and/or have a deeper soil profile. These conditions result in good drainage with higher rates of water transmission into the subsurface. In contrast, Type C and D soils are likely to contain a less permeable restricting clay layer, or are shallow, and this results in slower rates of water transmission into the subsurface. PA 3 consists of predominately C and D type soils with small amounts of B type soil and A type soil near the receiving water. Locations for each soil type within PA 3 and PA 4 is provided in Figure 2. GMU Geotechnical Incorporated, the primary project geotechnical engineer, has performed preliminary infiltration tests for PA 3 (see Attachment 1), but not yet for PA 4. However, based on the tests from PA 3 and NRCS mapping data, GMU has estimated the infiltration rates for the majority of PA 4.

Groundwater

In 1963 after years of ongoing low groundwater levels, Orange County made the decision to base future land uses in the southern part of the County on purchases of imported water from the State Water Project and the Colorado River Aqueduct. This decision limited the long-term effect of alluvial groundwater withdrawals to approximately 3,000 to 3,500 acre feet per year pumped by RMV. The San Juan Basin Authority currently pumps groundwater from the aquifers of the lower San Juan Basin; however, high salinity constrains which portions of the aquifer can be used and limits withdrawals.

Groundwater flow directions and the locations of key recharge areas were inferred from: (a) the results of the terrains analysis, the hydrogeologic conditions, the surface hydrology

modeling, and the water quality analysis; and (b) existing well data and bore logs, earlier technical reports on groundwater conditions in the watershed, detailed investigations from the 1960s by the California Department of Water Resources and local water districts, and portions of the SDRWQCB Basin Plan.

According to Plate 1.2 of the United States Geological Services (USGS) Canada Gobernadora Quadrangle, historical high groundwater reaches the surface within Canada Chiquita and Canada Gobernadora. Groundwater also rises up to 10 feet of the ground surface in many of the small tributaries to both Canada Chiquita and Canada Gobernadora.

Primary Pollutants of Concern

Primary pollutants of concern are those that have been identified on the 303(d) list. The 303(d) list includes pollutants that have been identified as causing impairment of receiving waters and their beneficial uses. Pathogens (bacteria indicators) have been identified on the 303(d) list as impairing the beneficial uses in Lower San Juan Creek and are therefore a primary pollutant of concern. DDE (Dichlorodiphenyldichloroethylene), Phosphorus, Selenium, Total Nitrogen, and Toxicity have also been identified on the 303(d) list as impairing the beneficial uses in San Juan Creek and are therefore a primary pollutant of concern.

Table 2 lists the water bodies within the San Juan watershed that have been included on the 2010 303(d) list.

Table 2: 2010 303(d) Listings for the San Juan Creek Watershed

Water Body	Pollutant	Extent	Expected TMDL Completion Date
Pacific Ocean Shoreline, Lower San Juan HSA	Bacteria Indicators	1.2 miles	2021
San Juan Creek (mouth)	Bacteria Indicators	1 mile and at mouth (6.3 acres)	2008
San Juan Creek	Bacteria Indicators	1 mile	2019
San Juan Creek	DDE (Dichlorodiphenyldichloroethylene)	1 mile	2019
San Juan Creek	Phosphorus	1 mile	2021
San Juan Creek	Selenium	1 mile	2021
San Juan Creek	Total Nitrogen	1 mile	2021
San Juan Creek	Toxicity	1 mile	2021

When designated beneficial uses of a particular water body are compromised, Section 303(d) of the CWA requires identifying and listing that water body as impaired. Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each pollutant impairing the beneficial use. A TMDL is an estimate of the total load of pollutants from point, non-point, and natural sources that a water body may receive without exceeding applicable water quality standards (including a factor of safety). For point sources, including stormwater from permitted sources, the load allocation is referred to as a Waste Load Allocation (WLA) whereas for nonpoint sources, the allocation is referred to simply as a Load Allocation (LA). Once established, the TMDL allocates the loads among current and future dischargers into the water body.

Fecal bacteria originate from the intestinal flora of warm-blooded animals, and their presence in surface water is used as an indicator of human pathogens. Pathogens can cause illness in recreational water users and people who harvest and eat filter-feeding shellfish. Bacteria have been historically used as indicators of human pathogens because they are easier and less costly to measure than the pathogens themselves. TMDLs for indicator bacteria were developed to address 17 of the 38 bacteria-impaired water-bodies in the San Diego Region, as identified on the 303(d) List of Water Quality Limited Segments. This phase of the TMDL is referred to as Project I Beaches and Creeks in the San Diego Region. On February 10, 2010, the San Diego Water Board adopted Resolution No. R9-2010-0001, an Amendment to the Water Quality Control Plan for the San Diego Region to incorporate the revised TMDLs for Indicator Bacteria, Project I – Twenty

Beaches and Creeks in the San Diego Region. This TMDL Basin Plan amendment was subsequently approved by the State Board on December 14, 2010, the Office of Administrative Law (OAL) on April 4, 2011, and the United States Environmental Protection Agency (USEPA) on June 22, 2011. Under state law, this TMDL Basin Plan became fully effective on April 4, 2011, the date of OAL approval.

The TMDL establishes numeric targets to meet numeric water quality objectives (WQOs) and subsequently ensure the protection of beneficial uses. TMDLs were established for each impaired water body, including San Juan Creek, for each indicator bacteria, for wet and dry weather. Single sample maximum WQOs were used as wet weather numeric targets, while geometric mean WQOs were used as numeric targets for dry weather periods.

Impaired waters were given a priority number of 1, 2, or 3 with 1 being the highest priority. Priority 1 waters also included waterbodies likely to be removed from the CWA Section 303(d) List of Water Quality Limited Segments. Priority schemes are designated within watersheds. The Pacific Ocean Shoreline at San Juan Creek and the San Juan Creek (mouth) are priority level 1 water bodies. San Juan Creek is a priority level 3 water body. The prioritized list recognizes the presence of segments or areas where bacterial water quality improvements are most likely to occur first (Priority 1), and segments or areas where bacterial water quality improvements are most likely to require more time to achieve (Priority 3).

Fecal coliform, total coliform, and enterococci loads and waste load reductions are required over a 10-year staged compliance schedule period. For San Juan Creek, a priority 3 water body, the first stage consists of an initial 6-year period during which no total coliform, fecal coliform, and enterococci load and waste load reductions are required. A 50 percent reduction to the allocations must be achieved by year 7 for priority 3 water bodies. A 100 percent reduction to the allocations is required for all water bodies by year 10.

Numeric wet weather targets allow a 22% exceedance frequency of the single sample WQOs for REC-1. The purpose of the exceedance frequency is to account for the natural, and largely uncontrollable, sources of bacteria (e.g., bird and wildlife feces) in the wet weather loads generated in the watersheds and at the beaches, which by themselves can cause exceedances of WQOs. The basis for the exceedance criteria is the frequency of exceedance of the single sample maximum WQOs measured in a reference stream system in Los Angeles County (Leo Carrillo Beach/Arroyo Sequit Watershed). A reference stream system is a beach and upstream watershed that are minimally impacted by anthropogenic activities. The reference stream system approach also incorporates antidegradation principles in that, if water quality is better than that of the reference system in a particular location, no degradation of existing bacteriological water quality is permitted.

The Final TMDLs for San Juan Creek for wet weather discharges and dry weather discharges are listed in Table 3 and Table 4, respectively. Allocations for each TMDL are expressed as annual loads in terms of bacteria colonies per year (billion MPN/year), where

MPN is the "most probable number." Responsible parties for point source discharges include the California Department of Transportation (Caltrans), and owners and operators of Phase I and Phase II MS4 systems within the San Juan Creek watershed. Persons responsible for controllable nonpoint discharges include owners and operators of agricultural and livestock operations in watersheds where bacteria loads from these land uses are more than 5 percent of the total load, including the San Juan Creek watershed. Non-controllable nonpoint source loads come from mostly natural sources (e.g. bird and wildlife feces).

Table 3: San Juan Creek Wet Weather TMDLs and Allocations

Lower San Juan HSA (901.27)	Indicator Bacteria[a]	Existing Load (MPN/year)	Single Sample Maximum Objective (MPN/100mL)	Allowable Numeric Objective Load (Billion MPN/Year)	Total Wet Days in Critical Year	Allowable Exceedance Frequency[b]	Allowable Wet Exceedance Days in Critical Year	Total Allowable Load [=TMDL] (Billion MPN/year)
-Pacific Ocean Shoreline -San Juan Creek -San Juan Creek mouth	Fecal Coliform	15,304,970	400	358,410	76	22%	17	14,714,833
	Total Coliform	130,258,863	10,000	8,947,114				122,879,189
	Enterococcus	12,980,098	104[c]	95,357				12,159,138
		12,980,098	61	56,119				12,152,446

Table 4: San Juan Creek Dry Weather TMDLs and Allocations

Lower San Juan HSA (901.27)	Indicator Bacteria[a]	Existing Load (MPN/mth)	30-Day Geometric Mean Objective (MPN/100mL)	Allowable Numeric Objective Load (Billion MPN/mth)	Total Dry Days in Critical Year	Allowable Exceedance Frequency[b]	Allowable Dry Exceedance Days in Critical Year	Total Allowable Load [=TMDL] (Billion MPN/mth)
-Pacific Ocean Shoreline -San Juan Creek -San Juan Creek mouth	Fecal Coliform	6,455	200	1,665	289	0%	0	1,665
	Total Coliform	30,846	1,000	8,342				8,342
	Enterococcus	5,433	33[c]	275				275

[a] As San Juan Creek is not tributary directly to an impaired beach but instead to an impaired lagoon, numeric targets for total coliform were not needed to protect for shellfish beneficial uses. Thus, numeric WQOs were selected for fecal coliform and enterococci only.
[b] Exceedance frequency based on reference condition observed in the Los Angeles Region.
[c] TMDL calculated using a Enterococcus numeric target of 61 MPN/mL that is conservatively protective of the REC-1 "designated beach" usage frequency for freshwater creeks and downstream beaches. If the usage frequency of the freshwater creeks can be established as "moderately to lightly used" in the Basin Plan, alternative TMDLs calculated using an Enterococcus numeric target of 104 MPN/ml might be used.

The primary mechanism for TMDL attainment in urban areas will be increased regulation of the MS4 discharges through the MS4 NPDES Permits. As the WLA for MS4 discharges was not distributed among the various municipalities in the watershed, the MS4 discharges are collectively responsible for meeting the TMDL requirements. The SDRWQCB will reissue the MS4 NPDES Permit to incorporate water quality-based effluent limitations (WQBELs) consistent with the assumptions and requirements of the bacteria WLAs, and requirements for monitoring and reporting. At a minimum, WQBELs will include a BMP program of expanded or better-tailored BMPs to attain the WLAs in accordance with the TMDL compliance schedule.

Areas of Special Biological Significance and Environmentally Sensitive Areas

Areas of Special Biological Significance

Areas of Special Biological Significance (ASBS) are those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. No ASBS exist near the project.

Environmentally Sensitive Areas

A PDP may potentially impact an environmentally sensitive area (ESA) if it is located within, directly adjacent to (within 200 feet), or discharging directly to receiving waters within an ESAs.

- Per the 2011 Orange County Technical Guidance Document (TGD), an ESA exists if any of the following designations have been applied to the water body of concern: Clean Water Act 303(d) listed impaired water body based on most recent approved 303(d) list.
- Areas designated as Special Biological Significance by the SWRCB in the Water Quality Control Plan for Ocean Waters of California (California Ocean Plan)
- Water bodies designated with the RARE beneficial use by the SWRCB in the Water Quality Control Plans for the Santa Ana River and San Diego Basins (Region 8 and Region 9 Basin Plans)
- Water bodies located within areas designated under the California Department of Fish and Wildlife's Natural Community Conservation Planning (NCCP) Program as preserves or equivalent in subregional plans (http://www.dfg.ca.gov/nccp/status.htm)
- Areas designated as Critical Aquatic Resources (CAR) in the Orange County Drainage Area Management Plan (DAMP)
- Any other equivalent ESAs that contain water bodies that have been identified by the local jurisdiction to be of local concern.

The maps available at the OC Watersheds website (http://www.ocwatersheds.com/ESA.aspx) may be used to assist in the identification and classification Priority Projects in order to determine if they potentially impact an ESA.

The lower one-mile and mouth of San Juan Creek are listed on the CWA 303(d) list. Discharge points from PA 3 are located just over four miles upstream of this reach of San Juan Creek so this designation is not a concern.

As previously discussed in this section, there are no ASBS in the proximity of this project. There are no water bodies designated with the RARE beneficial downstream of the project.

There are no water bodies designated under the California Department of Fish and Wildlife's Natural Community Conservation Planning (NCCP) Program as preserves as the Southern Subregion NCCP was not approved. However, both San Juan Creek and Gobernadora Creek are designed as future Aquatic Resource Conservation Areas under the SAMP and future habitat reserve lands under the SSHCP.

According to the Orange County Local Implementation Plan, the Pacific Ocean Shoreline within the San Juan Watershed is designated as a CAR. However, this is approximately 4 miles from the project so this designation is not a concern.

Section IV Best Management Practices (BMPs)

BMP Selection

New development and significant redevelopment projects are required by the Local WQMP to develop and implement a Project WQMP that includes BMPs. Priority projects such as the PA 3 and PA 4 Project must include BMPs in each of the following categories:

- Source Control BMPs
- Site Design and LID BMPs and
- Project-based Treatment Control BMPs and/or participation in an approved regional or watershed management program.

Projects for which hydrologic conditions of concern have been identified shall also control post-development peak stormwater runoff discharge rates and velocities to maintain or reduce pre-development downstream erosion rates and to protect stream habitat.

The BMPs that have been incorporated into this WQMP have been selected to address the potential pollutants of concern listed in Section II and the priority pollutants of concern listed in Section III. They will also provide runoff flow control from both projects. As discussed in Section II, Sub-Drainage Area D is subject to hydromodification requirements and will incorporate BMPs to mitigate for the hydrologic conditions of concern.

Source Control BMPs

Source controls BMPs (routine non-structural BMPs, routine structural BMPs, and BMPs for individual categories/project features) are required by the Local WQMP and Section 2.4.5 of the Model WQMP within all new development and significant redevelopment projects unless they do not apply due to the project characteristics. Source control BMPs have been selected based on the land uses included within each sub-drainage area (Master Area Plan Attachment 1). California Stormwater Quality Association (CASQA) BMP Fact Sheet numbers are included in parentheses where applicable.

Non-Structural Source Control BMPs

Table 5 lists the routine non-structural BMPs from the Local WQMP BMPs that are applicable to and will be implemented in each sub-drainage area in PA 3 and PA 4.

Table 5: Routine Non-Structural Source Control BMPs

Identifier	Name	Check One		If not applicable, state brief reason
		Included	Not Applicable	
N1	*Education for Property Owners, Tenants and Occupants*	X (All sub-areas)		
N2	*Activity Restrictions*	X (All sub-areas)		
N3 (SC-73)	*Common Area Landscape Management*	X (All sub-areas)		
N4	*BMP Maintenance*	X (All sub-areas)		
N5	*Title 22 CCR Compliance (How development will comply)*		X	No land uses are included that would generate hazardous waste.
N6	*Local Industrial Permit Compliance*	X (All sub-areas)		
N7 (SC-11)	*Spill Contingency Plan*	X (All sub-areas)		
N8	*Underground Storage Tank Compliance*	X (All sub-areas)		
N9	*Hazardous Materials Disclosure Compliance*		X	No land uses are included that would generate hazardous waste.
N10	*Uniform Fire Code Implementation*	X (All sub-areas)		
N11 (SC-60)	*Common Area Litter Control*	X (All sub-areas)		
N12	*Employee Training*	X (All sub-areas)		
N13 (SD-31)	*Housekeeping of Loading Docks*	X (All sub-areas)		
N14 (SC-74)	*Common Area Catch Basin Inspection*	X (All sub-areas)		
N15 (SC-43, SC-70)	*Street Sweeping Private Streets and Parking Lots*	X (All sub-areas)		
N16 (SD-30, SC-20)	*Retail Gasoline Outlets*	X (All sub-areas)		

The routine non-structural source control BMPs will be implemented as follows:

N1 Education for Property Owners, Tenants and Occupants

For developments with no Property Owners Association (POA) or with POAs of less than fifty (50) dwelling units, practical information materials will be provided to the first residents/occupants/tenants on general housekeeping practices that contribute to the protection of stormwater quality. These materials will be initially developed and provided to first residents/occupants/tenants by the developer. Thereafter such materials will be available through the Permittees‟ education program. Different materials for residential, office commercial, retail commercial, vehicle-related commercial and industrial uses will be developed.

For developments with POA and residential projects of more than fifty (50) dwelling units, project conditions of approval will require that the POA periodically provide environmental awareness education materials, made available by the municipalities, to all of its members. Among other things, these materials will describe the use of chemicals (including household type) that should be limited to the property, with no discharge of wastes via hosing or other direct discharge to gutters, catch basins and storm drains. Educational materials available from the County of Orange can be downloaded here: http://www.ocwatersheds.com/PublicEd/resources/default.aspx

N2 Activity Restrictions

If a POA is formed, conditions, covenants and restrictions (CCRs) must be prepared by the developer for the purpose of surface water quality protection. An example would be not allowing car washing outside of established community car wash areas in multi-unit complexes. Alternatively, use restrictions may be developed by a building operator through lease terms, etc. These restrictions must be included in the Project WQMP.

N3 (SC-73) Common Area Landscape Management

Identify on-going landscape maintenance requirements that are consistent with those in the County Water Conservation Resolution (or city equivalent) that include fertilizer and/or pesticide usage consistent with Management Guidelines for Use of Fertilizers (DAMP Section 5.5). Statements regarding the specific applicable guidelines must be included in the Project WQMP.

N4 BMP Maintenance

The Project WQMP shall identify responsibility for implementation of each non-structural BMP and scheduled cleaning and/or maintenance of all structural BMP facilities.

N5 Title 22 CCR Compliance

Compliance with Title 22 of the California Code of Regulations (CCR) and relevant sections of the California Health & Safety Code regarding hazardous waste management is enforced by County Environmental Health on behalf of the State. The Project WQMP must describe how the development will comply with the applicable hazardous waste management section(s) of Title 22.

N6 Local Water Quality Permit Compliance

The Permittees, under the Water Quality Ordinance, may issue permits to ensure clean stormwater discharges from fuel dispensing areas and other areas of concern to public properties.

N7 (SC-11) Spill Contingency Plan

A Spill Contingency Plan is prepared by building operator or occupants for use by specified types of building or suite occupancies. The Spill Contingency Plan describes how the occupants will prepare for and respond to spills of hazardous materials. Plans typically describe stockpiling of cleanup materials, notification of responsible agencies, disposal of cleanup materials, documentation, etc.

N8 Underground Storage Tank Compliance

Compliance with State regulations dealing with underground storage tanks, enforced by County Environmental Health on behalf of State.

N9 Hazardous Materials Disclosure Compliance

Compliance with Permittee ordinances typically enforced by respective fire protection agencies for the management of hazardous materials. The Orange County, health care agencies, and/or other appropriate agencies (i.e., Department of Toxics Substances Control) are typically responsible for enforcing hazardous materials and hazardous waste handling and disposal regulations.

N10 Uniform Fire Code Implementation

Compliance with Article 80 of the Uniform Fire Code enforced by fire protection agency.

N11 (SC-60) Common Area Litter Control

For industrial/commercial developments and for developments with POAs, the owner/POA should be required to implement trash management and litter control procedures in the common areas aimed at reducing pollution of drainage water. The owner/POA may contract with their landscape maintenance firms to provide this service during regularly scheduled maintenance, which should consist of litter patrol, emptying of trash receptacles in common areas, and noting trash disposal violations by tenants/homeowners or businesses and reporting the violations to the owner/POA for investigation.

N12 Employee Training

Education program (see N1) as it would apply to future employees of individual businesses. Developer either prepares manual(s) for initial purchasers of business site or for development that is constructed for an unspecified use makes commitment on behalf of POA or future business owner to prepare. An example would be training on the proper storage and use of fertilizers and pesticides, or training on the implementation of hazardous spill contingency plans.

N13 (SD-31) Housekeeping of Loading Docks

Loading docks typically found at large retail and warehouse-type commercial and industrial facilities should be kept in a clean and orderly condition through a regular program of

sweeping and litter control and immediate cleanup of spills and broken containers. Cleanup procedures should minimize or eliminate the use of water if plumed to the storm sewer. If wash water is used, it must be disposed of in an approved manner and not discharged to the storm drain system. If there are no other alternatives, discharge of non-stormwater flow to the sanitary sewer must be at an acceptable discharge point such as a cleanout, oil/water separator, grease interceptor, or industrial sewer connection. All sewer discharges shall be in accordance with the Orange County Sanitation District's Wastewater Discharge Regulations and/or Washwater Disposal Guidelines.

N14 (SC-74) Common Area Catch Basin Inspection

For industrial/commercial developments and for developments with privately maintained drainage systems, the owner is required to have at least 80 percent of drainage facilities inspected, cleaned and maintained on an annual basis with 100 percent of the facilities included in a two-year period. Cleaning should take place in the late summer/early fall prior to the start of the rainy season. Drainage facilities include catch basins (storm drain inlets) detention basins, retention basins, sediment basins, open drainage channels and lift stations. Records should be kept to document the annual maintenance.

N15 (SC-43, SC-70) Street Sweeping Private Streets and Parking Lots

Streets and parking lots are required to be swept prior to the storm season, in late summer or early fall, prior to the start of the rainy season or equivalent as required by the governing jurisdiction.

N16 (SD-30, SC-20) Retail Gasoline Outlets

Retail gasoline outlets (RGOs) are required to follow the guidelines of this TGD and Model WQMP and non-structural source control operations and maintenance BMPs shown in the CASQA Structural Source Control Fact Sheet SD-30, and Non-structural Source Control Fact Sheet (SC-20).

Other Non-structural Measures for Public Agency Projects

As required by the Model WQMP other non-structural measures shall be implemented and included in the Project Specific WQMP as applicable for new public agency Priority Projects as described in the Municipal Activity fact sheets www.ocwatersheds.com/MunicipalActivities.aspx. These include BMPs FF-1 through FF-13 for Fixed Facilities and DF-1 for Drainage Facilities (These BMPs are listed in the subsequent section). These measures are applicable to fixed facility municipal projects such as maintenance yards, schools, and libraries. Generally, these controls are more applicable to municipal projects than the fact sheets contained in the previous section;

however other structural and nonstructural controls previously and subsequently described in the next section shall be used where applicable. The following link contains the most recent versions of the Fixed Facility fact sheets, which can also be found at www.ocwatersheds.com/MunicipalActivities.aspx.

BMP maintenance responsibility will remain with the developers until a Home Owners Association (HOA) or another designated entity, such as Caltrans for BMPs located within the Ortega Highway right-of-way is established or determined to be responsible. Once the HOA or another designated entity is established or determined, they will be responsible for the inspection and maintenance of structural BMPs. The County is responsible for maintenance of the arterial roadways within PA 3 and PA 4. Residential streets are anticipated to be maintained by the HOA at this time.

Structural Source Control BMPs

Table 6 lists the routine structural BMPs that are required by the Local WQMP that are applicable to and will be implemented in each sub-drainage area in PA 3 and PA 4.

Table 6: Routine Structural Source Control BMPs

Identifier	Name	Check One: Included	Check One: Not Applicable	If not applicable, state brief reason
S1 (SD-13)	*Provide Storm Drain System Stenciling and Signage*	X (All sub-areas)		
S2 (SD-34)	*Design Outdoor Hazardous Material Storage Areas to Reduce Pollutant Introduction*		X	No outdoor hazardous material storage areas are included.
S3 (SD-32)	*Design Trash Storage Areas to Reduce Pollutant Introduction*	X (All sub-areas)		
S4 (SD-12)	*Use Efficient Irrigation Systems and Landscape Design*	X (All sub-areas)		
S5	*Protect Slopes and Channels*	X (All sub-areas)		
Requirements Applicable to Individual Project Features				
S6 (SD-31)	*Loading Dock Areas*	X (All sub-areas)		
S7 (SD-31)	*Maintenance Bays*		X	No vehicle maintenance operations are included.
S8 (SD-33)	*Vehicle Wash Areas*	X (All sub-areas)		
S9 (SD-36)	*Outdoor Processing Areas*		X	No outdoor processing areas are included.
S10	*Equipment Wash Areas*	X (All sub-areas)		
S11 (SD-30)	*Fueling Areas*	X (All sub-areas)		
S12 (SD-12)	*Hillside Landscaping*	X (All sub-areas)		
S13	*Wash Water Controls for Food Preparation*	X (All sub-areas)		
S14	*Community Car Wash Racks*	X (All sub-areas)		

The following measures are applicable to all project types. CASQA BMP Fact Sheet numbers are included in parentheses where applicable; these fact sheets provide further detail on these BMPs. The routine structural source control BMPs shall be implemented as follows:

S1 (SD-13) Provide Storm Drain System Stenciling and Signage

Storm drain stencils are highly visible source control messages, typically placed directly adjacent to storm drain inlets. The stencils contain a brief statement that prohibits the dumping of improper materials into the municipal storm drain system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the antidumping message. Stencils and signs alert the public to the destination of pollutants discharged into stormwater. The following requirements should be included in the project design and shown on the project plans:

1. Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified within the project area with prohibitive language (such as: "NO DUMPINGDRAINS TO OCEAN") and/or graphical icons to discourage illegal dumping.

2. Post signs and prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

3. Maintain legibility of stencils and signs.

See CASQA Stormwater Handbook BMP Fact Sheet SD-13 for additional information.

S2 (SD-34) Design Outdoor Hazardous Material Storage Areas to Reduce Pollutant Introduction

Improper storage of materials outdoors may increase the potential for toxic compounds, oil and grease, fuels, solvents, coolants, wastes, heavy metals, nutrients, suspended solids, and other pollutants to enter the municipal storm drain system. Where the plan of development includes outdoor areas for storage of hazardous materials that may contribute pollutants to the municipal storm drain system, or include transfer areas where incidental spills often occur, the following stormwater BMPs are required:

1. Hazardous materials with the potential to contaminate urban runoff shall either be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with storm water or spillage to the municipal storm drain system; or (2) protected by secondary containment structures (not double wall containers) such as berms, dikes, or curbs.

2. The storage area shall be paved and sufficiently impervious to contain leaks and spills.

3. The storage area shall have a roof or awning to minimize direct precipitation and collection of stormwater within the secondary containment area.

4. Any stormwater retained within the containment structure must not be discharged to the street or storm drain system.

5. Location(s) of installations of where these preventative measures will be employed must be included on the map or plans identifying BMPs.

See CASQA Stormwater Handbook Section 3.2.6 and BMP Fact Sheet SD-34 for additional information.

S3 (SD-32) Design Trash Enclosures to Reduce Pollutant Introduction

Design trash storage areas to reduce pollutant introduction. All trash container areas shall meet the following requirements (limited exclusion: detached residential homes):

1. Paved with an impervious surface, designed not to allow run-on from adjoining areas, designed to divert drainage from adjoining roofs and pavements diverted around the area, screened or walled to prevent off-site transport of trash; and

2. Provide solid roof or awning to prevent direct precipitation. Connection of trash area drains to the municipal storm drain system is prohibited. Potential conflicts with fire code and garbage hauling activities should be considered in implementing this source control.

See CASQA Stormwater Handbook Section 3.2.9 and BMP Fact Sheet SD-32 for additional information.

S4 (SD-12) Use Efficient Irrigation Systems and Landscape Design

Projects shall design the timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the municipal storm drain system. (Limited exclusion: detached residential homes.) The following methods to reduce excessive irrigation runoff shall be considered, and incorporated on common areas of development and other areas where determined applicable and feasible by the Permittee:

1. Employing rain shutoff devices to prevent irrigation after precipitation.

2. Designing irrigation systems to each landscape area's specific water requirements.

3. Using flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.

4. Implementing landscape plan consistent with County Water Conservation Resolution or city equivalent, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

5. The timing and application methods of irrigation water shall be designed to minimize the runoff of excess irrigation water into the municipal storm drain system.

6. Employing other comparable, equally effective, methods to reduce irrigation water runoff.

7. Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider other design features, such as:

- Use mulches (such as wood chips or shredded wood products) in planter areas without ground cover to minimize sediment in runoff.
- Install appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant material where possible and/or as recommended by the landscape architect.
- Leave a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible.
- Choose plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth.

Irrigation practices shall comply with local and statewide ordinances related to irrigation efficiency.

S5 Protect Slopes and Channels

Projects shall protect slopes and channels as described in Section 3.4 of this TGD.

S6 (SD-31) Loading Dock Areas

Loading /unloading dock areas shall include the following:

1. Cover loading dock areas, or design drainage to preclude run-on and runoff, unless the material loaded and unloaded at the docks does not have potential to contribute to stormwater pollution, and this use is ensured for the life of the facility.

2. Direct connections to the municipal storm drain system from below grade loading docks (truck wells) or similar structures are prohibited. Stormwater can be discharged through a permitted connection to the storm drain system with a treatment control BMP applicable to the use.

3. Other comparable and equally effective features that prevent unpermitted discharges to the municipal storm drain system.

4. Housekeeping of loading docks shall be consistent with N13.

See CASQA Stormwater Handbook Section 3.2.8 for additional information.

S7 (SD-31) Maintenance Bays

Maintenance bays shall include the following:

1. Repair/maintenance bays shall be indoors; or, designed to preclude urban run-on and runoff in an equally effective manner.

2. Design a repair/maintenance bay drainage system to capture all wash water, leaks and spills. Provide impermeable berms, drop inlets, trench catch basins, or

overflow containment structures around repair bays to prevent spilled materials and wash-down waters from entering the storm drain system. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the municipal storm drain system is prohibited. If there are no other alternatives, discharge of nonstormwater flow to the sanitary sewer may be considered only if allowed by the local sewerage agency through permitted connection.

Other features which are comparable and equally effective that prevent discharges to the municipal storm drain system without appropriate permits. See CASQA Stormwater Handbook Fact Sheet SD-31 for additional information.

S8 (SD-33) Vehicle Wash Areas

Projects that include areas for washing /steam cleaning of vehicles shall use the following:

1. Self-contained or covered with a roof or overhang.

2. Equipped with a wash racks, and with the prior approval of the sewerage agency (Note: Discharge monitoring may be required by the sewerage agency).

3. Equipped with a clarifier or other pretreatment facility.

4. If there are no other alternatives, discharge of non-stormwater flow to the sanitary sewer may be considered only allowed by the local sewerage agency through permitted connection. Alternately, non-storm water discharges may require a separate NPDES permit in order to discharge to the MS4. Some local jurisdictions also have permitting systems in place for these situations.

5. Other features which are comparable and equally effective that prevent unpermitted discharges, to the municipal storm drain system.

See CASQA Stormwater Handbook Sections 3.2.7 and 3.2.10 and Fact Sheet SD-33 for additional information.

S9 (SD-36) Outdoor Processing Areas

Outdoor process equipment operations, such as rock grinding or crushing, painting or coating, grinding or sanding, degreasing or parts cleaning, landfills, waste piles, and wastewater and solid waste handling, treatment, and disposal, and other operations determined to be a potential threat to water quality by the Permittee shall adhere to the following requirements.

1. Cover or enclose areas that would be the sources of pollutants; or, slope the area toward a sump that will provide infiltration or evaporation with no discharge; or, if there are no other alternatives, discharge of non-stormwater flow to the

sanitary sewer may be considered only allowed by the local sewerage agency through permitted connection.

2. Grade or berm areas to prevent run-on from surrounding areas.

3. Installation of storm drains in areas of equipment repair is prohibited.

4. Other features which are comparable or equally effective that prevent unpermitted discharges to the municipal storm drain system.

5. Where wet material processing occurs (e.g. Electroplating), secondary containment structures (not double wall containers) shall be provided to hold spills resulting from accidents, leaking tanks or equipment, or any other unplanned releases (Note: If these are plumbed to the sanitary sewer, the structures and plumbing shall be in accordance with Section 7.II - 8, Attachment D, and with the prior approval of the sewerage agency). Design of secondary containment structures shall be consistent with "Design of Outdoor Material Storage Areas to Reduce Pollutant Introduction".

Some of these land uses (e.g. landfills, waste piles, wastewater and solid waste handling, treatment and disposal) may be subject to other permits including Phase I Industrial Permits that may require additional BMPs. See CASQA Stormwater Handbook Section 3.2.5 for additional information.

S10 Equipment Wash Areas

Outdoor equipment/accessory washing and steam cleaning activities shall use the following:

1. Be self-contained or covered with a roof or overhang.

2. Design an equipment wash area drainage system to capture all wash water. Provide impermeable berms, drop inlets, trench catch basins, or overflow containment structures around equipment wash areas to prevent wash -down waters from entering the storm drain system. Connect drains to a sump for collection and disposal. Discharge from equipment wash areas to the municipal storm drain system is prohibited. If there are no other alternatives, discharge of non-stormwater flow to the sanitary sewer may be considered, but only when allowed by the local sewerage agency through a permitted connection.

3. Other comparable or equally effective features that prevent unpermitted discharges to the municipal storm drain system.

S11 (SD-30) Fueling Areas

Fuel dispensing areas shall contain the following:

1. At a minimum, the fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.
2. The fuel dispensing area shall be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete shall be prohibited.
3. The fuel dispensing area shall have an appropriate slope (2% - 4%) to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of stormwater.
4. An overhanging roof structure or canopy shall be provided. The cover's minimum dimensions must be equal to or greater than the area of the fuel dispensing area in the first item above. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area shall drain to the project's Treatment Control BMP(s) prior to discharging to the municipal storm drain system.

See CASQA Stormwater Handbook Section 3.2.11 and BMP Fact Sheet SD-30 for additional information.

S12 (SD-10) Site Design and Landscape Planning (Hillside Landscaping)

Hillside areas that are disturbed by project development shall be landscaped with deep-rooted, drought tolerant plant species selected for erosion control, satisfactory to the local permitting authority.

S13 Wash Water Controls for Food Preparation Areas

Food establishments (per State Health & Safety Code 27520) shall have either contained areas or sinks, each with sanitary sewer connections for disposal of wash waters containing kitchen and food wastes. If located outside, the contained areas or sinks shall also be structurally covered to prevent entry of stormwater. Adequate signs shall be provided and appropriately placed stating the prohibition of discharging washwater to the storm drain system.

S14 Community Car Wash Racks

In complexes larger than 100 dwelling units where car washing is allowed, a designated car wash area that does not drain to a storm drain system shall be provided for common usage. Wash waters from this area may be directed to the sanitary sewer (with the prior approval of the sewerage agency); to an engineered infiltration system; or to an equally effective alternative. Pre-treatment may also be required.

Municipal Non-Structural Source Control Measures

The following measures are applicable to fixed facility municipal projects such as maintenance yards, schools, and libraries. Generally, these controls are more applicable to municipal projects than the fact sheets contained in the previous section, however other structural and nonstructural controls described in this section and the previous section shall be used where applicable. The links below contain the most recent versions of the Fixed Facility fact sheets, which can also be found at www.ocwatersheds.com/MunicipalActivities.aspx.

- FF-1, Bay/Harbor Activities
- FF-2, Building Maintenance and Repair
- FF-3 Equipment Maintenance and Repair
- FF-4, Fueling
- FF-5, Landscape Maintenance
- FF-6, Material Loading and Unloading
- FF-7, Material Storage, Handling, and Disposal
- FF-8, Minor Construction
- FF-9, Parking Lot Maintenance
- FF-10, Spill Prevention and Control
- FF-11, Vehicle and Equipment Cleaning
- FF-12, Vehicle and Equipment Storage
- FF-13, Waste Handling and Disposal

BMP maintenance responsibility will remain with the developers until a Home Owners Association (HOA) or another designated entity, such as Caltrans for BMPs located within the Ortega Highway right-of-way is established or determined to be responsible. Once the HOA or another designated entity is established or determined, they will be responsible for the inspection and maintenance of structural BMPs. The County is responsible for maintenance of the arterial roadways within PA 3 and PA 4. Residential streets are anticipated to be maintained by the HOA at this time.

Site Design and LID BMPs

Site design BMPs that help reduce the predicted increase in runoff volume include the clustering of development into planning areas, leaving large amounts of undeveloped open space within the Ranch Plan. The use of native and drought tolerate plants in landscaped areas and the use of efficient irrigation systems in common landscaped areas will help reduce or eliminate dry weather flows. Projects can also address the Local WQMP objectives through the incorporation of appropriate site design BMPs intended to create a hydrologically functional project design that attempts to mimic the natural hydrologic regime. Mimicking a site's natural hydrologic regime can be pursued by:

- Reducing imperviousness, conserving natural resources and areas, maintaining and using natural drainage courses in the municipal storm drain system, and minimizing clearing and grading.

- Providing runoff storage measures dispersed uniformly throughout a site's landscape with the use of a variety of detention, retention, and runoff control practices.

- Implementing on-lot hydrologically functional landscape design and management practices.

Runoff from developed areas may be reduced by using alternative materials or surfaces with a lower coefficient of runoff, or C Factor. The C Factor is a measure of the ability of a surface to produce runoff. Surfaces that produce higher volumes of runoff are represented by higher C Factors. By incorporating more pervious lower-C-factor surfaces into a development, lower volumes of runoff will be produced. Lower volumes and rates of runoff translate directly to smaller treatment design volumes.

The Local WQMP requires that the site design options and characteristics listed in Table 7 be considered and incorporated, where applicable and feasible, during the site planning and approval process consistent with applicable General Plan policies, other development standards and regulations, and any site design BMPs included in an applicable regional or watershed program. The site design BMPs that are incorporated into the Planning Area 3 and 4 project are listed in Table 7.

Table 7: Implementation of Site Design BMPs

Technique	Included		Brief Description of Method
	Yes	No	
Minimize Impervious Area/Maximize Permeability (C-Factor Reduction)	X		• In areas not subject to mass grading, the smallest site disturbance area possible will be delineated and flagged and temporary storage of construction equipment will be restricted in these areas to minimize soil compaction on site. • Extensive landscaped areas will be incorporated into the developed areas. • A community trail (Trail Y) will use existing graded Ranch roads that are pervious. Regional riding and hiking trails will be designed to comply with the standards outlined in the Recreation Element of the County General Plan. • Streets, sidewalks, and parking lot aisles will be constructed to the minimum widths specified in the County Land Use Code and in compliance with regulations for the Americans with Disabilities Act and safety requirements for fire and emergency vehicle access. • Impervious surfaces will be minimized in landscape design.
Minimize Directly Connected Impervious Areas (DCIAs) (C-Factor Reduction)	x		• Vegetated swales, or other design concepts that are comparable and equally effective, will be used to convey runoff where feasible. • Roof runoff for low-density housing, education, or commercial development may be directed to planter boxes or vegetated swales located in common areas, or other design concepts that are comparable and equally effective.

Technique	Included		Brief Description of Method
	Yes	No	
			• Runoff from sidewalks, walkways, trails, and patios will be directed into adjacent landscaping, to vegetated swales, or other design concepts that are comparable and equally effective. • Unlined vegetated swales will be incorporated except where such infiltration will affect slope stability. • Unpaved off-road temporary or guest parking in residential areas will be paved with a permeable surface, designed to drain into landscaping before discharging to the municipal storm drain system, or other design concepts that are comparable and equally effective. • Conveyance design will incorporate design concepts that are comparable and equally effective as an urban curb/swale system. • • Where landscaping is proposed in parking areas, landscape areas will be incorporated into the drainage design, or other design concepts that are comparable and equally effective.
Create Reduced or "Zero Discharge" Areas (Runoff Volume Reduction)	X		• Existing native trees and shrubs will be conserved in the open space reserve areas. • Native or drought-tolerant non-invasive trees and large shrubs will be incorporated into non-reserve open space and landscaped areas, where feasible. • The stormwater collection and treatment system will include extended detention basins, bioretention basins, and/or biofiltration basins that will provide opportunities for infiltration where soil conditions are suitable, or harvest and use where stored runoff will be used for irrigation reuse.
Conserve Natural Areas (C-Factor Reduction)	X		• Additional open space and parks will be provided internal to the development area boundary. • Additional open space will be provided through the Open Space Dedication Program in Planning Area 10 in accordance with the County of Orange/RMV Open Space Agreement

Design Objectives

The following guidelines shall be implemented to address specific concerns highlighted by the Regional Board:

- Onsite irrigation drainage and any sub-drain systems shall not discharge in an uncontrolled manner down bluffs;

- Roof runoff shall be directed into adjacent landscaping before discharging to the storm drain, to vegetated conveyance or treatment BMPs, and/or to storage facilities for irrigation reuse; and

- Landscaping plans for slopes exceeding one acre and all upland common areas shall use landscape materials that are adaptable to the existing climate and soil conditions.

BMP selection criteria will be based on the maximum extent practicable standards. Selection will be determined on a site specific basis considering underlying soil and groundwater conditions, slope stability, structural and utility conflicts, and constructability. BMP selection hierarchy will follow this order; infiltration, harvest and use, evapotranspiration, biofiltration, and other treatment controls, such as gross solids removal.

Treatment Control BMPs

Priority projects within Orange County are required to reduce pollutants of concern in stormwater discharges to the maximum extent practicable through the incorporation and implementation of treatment control BMPs. Priority projects subject to hydromodification requirements also must incorporate BMPs to mitigate for the increase in runoff anticipated from the development. To meet these requirements, new development projects shall implement a single BMP or combination of stormwater treatment BMPs that will address the pollutants of concern and hydrologic conditions of concerns. Candidate treatment BMPs set forth in the DAMP are listed in Table 8, along with the pollutants of concern addressed by each.

The treatment components were selected taking into account the priority pollutants of concern and those BMPs that are effective at treating them. BMP performance data used for this purpose included national as well as local data, including DAMP Appendix E1, BMP Effectiveness and Applicability for Orange County (June 2003). PA 3 and PA 4 will use infiltration basins, harvest and use, dry extended detention basins, biofiltration basins, bioretention basins, bioretention areas, media filtration, or a combination of the aforementioned as treatment control BMPs. BMP selection should be prioritized so infiltration, harvest and use, and bioretention are chosen for implementation prior to implementing any other BMP. After these three BMP types have been considered and deemed not feasible, alternative BMPs can be considered. HOAs or another designated entity shall be responsible for the inspection and maintenance of the treatment control BMPs within their boundaries. These BMPs, when combined with the site design and source control BMPs described above, will address all of the pollutants of concern.

If retention of the design capture volume (DCV) is not feasible and biofiltration BMPs are used they must meet the requirements identified in Section d (4)(d)(ii) of Order No. R9-2009-0002. This identifies that LID biofiltration BMPs must be sized to hold at least 0.75 times the design storm volume that is not retained onsite by LID retention BMPs. The biofiltration BMPs identified per the TGD have the capacity to meet this standard.

BMP maintenance responsibility will remain with the developers until a Home Owners Association (HOA) or another designated entity, such as Caltrans for BMPs located within the Ortega Highway right-of-way is established or determined to be responsible. Once the HOA or another designated entity is established or determined, they will be responsible for the inspection and maintenance of structural BMPs. The County is responsible for

maintenance of the arterial roadways within PA 3 and PA 4. Residential streets are anticipated to be maintained by the HOA at this time.

County of Orange OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

Table 8: Treatment Control BMP Selection Matrix

BMP Type	Assumed Principal Unit Operations and Processes Provided	Sediment/ Turbidity	Nitrogen	Phosphorus	Pathogens	Heavy Metals	Hydrocarbons	Dissolved Toxic Organic Compounds	Trash and Debris
Bioretention	Particulate Settling, Size Exclusion, Inert Media Filtration, Sorption/Ion Exchange, Microbial Competition/Predation, Biological Uptake, Volume loss (via infiltration, ET)	**H**	**L**	**L**	**M**	**M**	**M**	**M**	**H**
Bioretention system with internal water storage zone and nutrient sensitive media design	Bioretention UOPs, plus: Microbially Mediated Transformations (if designed with internal water storage zone)	**H**	**M**	**M**	**M**	**M**	**M**	**M**	**H**
Dry Extended Detention Basins	Particulate Settling, Size Exclusion, Floatable Capture, Vegetative Filtration (with low-flow channel), Volume loss (via infiltration, ET)	**M**	**L**	**M**	**M**	**L**	**L**	**L**	**H**
Dry extended detention basin with vegetated sand filter outlet structure	Dry extended detention basin UOPs, plus: Inert Media Filtration	**H**	**L**	**M**	**M**	**M**	**M**	**L**	**H**
Vegetated Swale	Vegetative Filtration, Sorption/Ion Exchange, and Volume loss (via infiltration, ET)	**M**	**L**	**L**	**M**	**L**	**M**	**M**	**M**
Vegetated Filter Strip	Vegetative Filtration, Sorption/Ion Exchange, Volume loss (via infiltration, ET)	**M**	**L**	**L**	**M**	**L**	**M**	**M**	**L**
Wet Ponds or Wetlands	Particulate Settling, Size Exclusion, Floatable Capture, Sorption/Ion Exchange, Microbially Mediated Transformations, Microbial Competition/Predation, Biological Uptake, Solar Irradiation, Volume loss (via infiltration, ET)	**H**	**M**	**M**	**M**	**M**	**H**	**M**	**H**
Proprietary Biofiltration and Treatment Control	Varies by product	Expected performance should be based on evaluation of unit processes provided by BMP and available testing data[1].							

Source: Orange County TGD 2011 Table 4.2
H, M, and L indicate high, medium, and low removal efficiencies respectively.
[1] Testing data should be evaluated based primarily on the effluent quality achieved by the BMP and the ability of the BMP to provide statistically significant removal under average conditions. Percent removal alone should not be used to evaluate the performance of proprietary BMPs (See Wright Water Engineers and Geosyntec Consultants, 2007). The basis for determining the rating of proposed proprietary BMPs must be documented in the Project WQMP. Approval is based on the discretion of the reviewing agency. Product-specific rankings may be published in the Technical Guidance Document in the future.

Site Design Alternatives

Regional Option

Three options for implementing the treatment BMP plan for PA 3 and PA 4 include (1) the regional option, (1) the local option, or (3) a hybrid option, which would involve the combination of both the regional and local strategies. This section describes the regional option.

Stormwater runoff from the northern portion of PA 3 (Sub-drainage Area D) will be routed to water quality basins for treatment. The water quality basins will incorporate infiltration, bioretention, biofiltration, and/or dry extended detention to provide water quality treatment, flood attenuation, and hydromodification mitigation for storm flows. Trash racks will be installed on the water quality basin inlets to aid in capturing trash and debris. Stormwater runoff in the other three areas of PA 3 (Sub-drainage Areas A, B, and C) will be conveyed to infiltration basins at the southern end of the project. These basins will provide water quality treatment as well as flood control volume and flow attenuation.

Stormwater runoff from the developed southern portion of PA 4 (Sub-drainage Area E and F) will be routed to water quality basins for treatment. The water quality basins will incorporate infiltration to provide water quality treatment and the outlets will be placed at the 10-year floodplain in order to be exempt from hydromodification by RMV ROMP exemption. Trash racks will be installed on the water quality basin inlets to aid in capturing trash and debris.

Infiltration basins are designed with outlets that retain the runoff volume from the water quality design storm or hydromodification mitigation (via SOCHM) for some time (in this case, 48 hours) to infiltrate into the existing natural layer. Basin's side-slope may also contain native vegetation to provide biological uptake through the vegetation roots as well as infiltration and evapotranspiration.

Bioretention and biofiltration basins contain vegetation and engineered soils that provide water quality benefits as well as volume and flow reduction. Biofiltration basins incorporate underdrains where bioretention basins infiltrate and retain runoff. They both provide pollutant removal through settling, filtration, and biological uptake in the vegetation lining of the basin. They also provide the opportunity for volume reductions through infiltration and evapotranspiration. A biofiltration basin has been proposed for drainage area D3 as the infiltration tests show zero infiltration at the location of the basin.

Dry extended detention basins are designed with outlets that detain the runoff volume from the water quality design storm (e.g., the 85th percentile 24-hour event) for some minimum time (in this case, 48 hours) to allow particles and associated pollutants to settle out. Detention basin's should also contain native vegetation to provide biological uptake through the vegetation roots as well as incidental infiltration and evapotranspiration.

The water quality basins may also incorporate wetland vegetation in a low flow channel in the bottom of the basin for the treatment of dry weather flows and small storm events. Wetland vegetation provides one of the most effective methods for pollutant removal. As runoff flows through the wetland vegetation, pollutant removal is achieved through settling and biological uptake of nutrients and dissolved pollutants by microorganisms associated with the vegetation and soils. These basins are not designed or anticipated to contain ponded, standing water for periods in excess of 96 hours.

Per the MS4 permit, the water quality basins within PA 3 and PA 4 will be designed to contain a "water quality pool" sized to meet the maximized stormwater capture 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). The water quality pool is designed to drain in 48 hours.

Local Option

The second option for the treatment BMP plan for PA 3 and PA 4 is the local option. This section describes the local option.

Stormwater runoff will be routed in a similar manner as previously discussed but will be reduced and treated throughout the Planning Area through LID concepts as well as smaller water quality basins and/or BMPs. The LID approach may incorporate the following BMPs:

Residential BMPs to be considered

- Minimize use of non-porous hardscape.
- Restrict curb cores that convey directly connected impervious areas. If curb cores are utilized encourage roof drains to outlet into landscaped areas or planters before discharging into streets or storm drain systems (subject to building and grading code requirements).
- Install dry wells to capture low flows and first flush, for infiltration vs. discharge to the storm drain system.
- Install irrigation systems that do not overspray onto impervious surfaces, and do not irrigate during storms.
- Group planting materials with similar irrigation requirements and set controls for frequency and duration that match the needs to the plant materials.
- Use either lot or common area rock or vegetated swales/strips to treat and allow infiltration of stormwater.

Commercial BMPs to be considered

- Minimize use of non-porous hardscape.

- Restrict curb coring of lots, and encourage roof drains to outlet into landscaped areas or planters before discharging into streets or storm drain systems (subject to building and grading code requirements).
- Use cisterns to capture rain and re-use for irrigation purposes.
- Install dry wells, to capture low flows and the first flush, for infiltration vs. discharge to the storm drain system.
- Install irrigation systems that do not over spray onto impervious surfaces, and do not irrigate during storms.
- Group planting materials with similar irrigation requirements, and set controls for frequency and duration that match the needs to the plant materials.
- Use rock or vegetated swales/strips to treat and allow infiltration of stormwater.

Other BMPs to be considered

- Minimize use of non-porous hardscape.
- Install irrigation systems that do not over spray onto impervious surfaces, and do not irrigate during storms.
- Group planting materials with similar irrigation requirements and set controls for frequency and duration that match the needs to the plant materials.
- Use rock or vegetated swales/strips to treat and allow infiltration of stormwater.
- Drought tolerant plant mix.

LID BMPs may also include the use of bioretention areas, pervious areas, and infiltration BMPs wherever feasible. The water quality basins will incorporate bioretention, biofiltration, and/or extended detention to provide water quality treatment, flood attenuation, and hydromodification mitigation for storm flows. Trash racks will be installed on the water quality basin inlets to aid in capturing trash and debris. The bioretention areas and basins can be located on a site-by-site basis (e.g., parking lots), or using a sub-regional approach. Areas that contain poor draining soils shall incorporate underdrains as needed.

Bioretention areas are vegetated (i.e., landscaped) shallow depressions that provide storage, infiltration, and evapotranspiration, and provide for pollutant removal (e.g., filtration, adsorption, nutrient uptake) by filtering stormwater through the vegetation and soils. In bioretention areas, pore spaces and organic material in the soils help to retain water in the form of soil moisture and to promote the adsorption of pollutants (e.g., dissolved metals and petroleum hydrocarbons) into the soil matrix. Plants use soil moisture and promote the drying of the soil through transpiration.

Hybrid Option

The third option for the implementation of the treatment BMP plan for PA 3 and PA 4 is a combination of both the regional and local strategies. Stormwater runoff from the Planning Areas will be designed to meet treatment, hydromodification, and flood control requirements using regional BMPs, sub-regional BMPs, and local LID strategies.

Roadway improvements associated with PA 3 and PA 4 will add more than 5,000 square feet of new impervious surface area in the post-developed condition and therefore will require runoff treatment in accordance with the County DAMP/LIP. The new impervious surface will result in an increase of more than 50 percent of the existing impervious surface area. Therefore, treatment control BMPs provided for the improvements to each roadway will be sized to include the drainage from the existing impervious area within the impacted area, as well as from the new impervious area as required by the County DAMP/LIP. Infiltration devices and/or biofiltration BMPs shall be provided for these roadways.

Preferred Alternative

The preferred alternative of the options identified above is the Regional Option to provide the most flexibility for the land plan for PA 3 and PA 4. If basin locations permit implementation of adequate sized basins and the infiltration rates after infiltration testing is performed meets or exceeds the estimated infiltration rates the Regional Option will be implemented. If the regional option is infeasible the Hybrid Option will be used.

Section V Inspection/Maintenance Responsibility for BMPs

The Local WQMP requires that project WQMPs identify the mechanisms by which long term operation and maintenance of all structural BMPs will be provided. This section outlines a general stormwater BMP operation and maintenance program.

Objectives

The objectives of the operation and maintenance program are:

1. Optimize treatment BMP performance and the management of water quality leaving the system.
2. Minimize adverse environmental impacts from maintenance activities. Proposed maintenance activities are described below. Maintenance activities may be modified over time as experience is gained. Substantive modifications to the maintenance program will be made only with County of Orange approval.

Maintenance Responsibility

Maintenance responsibility will remain with the developers until a Home Owners Association (HOA) or another designated entity, such as Caltrans for BMPs located within the Ortega Highway right-of-way is established or determined to be responsible. Once the HOA or another designated entity is established or determined, they will be responsible for the inspection and maintenance of structural BMPs. The County is responsible for maintenance of the arterial roadways within PA 3 and PA 4. Residential streets are anticipated to be maintained by the HOA at this time.

General Operation and Maintenance Activities

A standard operations and maintenance program is described below. Table 9 indicates the types of activities that are typically performed on each type of BMP. Each of the facilities will be operated and maintained with some variations from the standard program as appropriate for each site.

At some BMP facility sites, measures will be taken to limit potential impacts on sensitive species from the standard maintenance activities. These "minimization measures" will include avoidance of the nesting seasons for special status avian species to the extent feasible. These activities will be covered in the Project Specific WQMPs.

Table 9: Typical Operation and Maintenance Activities

BMP	Treatment System Component				
	Routine Action	**Maintenance Indicator**	**Measurement Frequency**	**Frequency**	**Maintenance Activity**
Bioretention	Vegetation Management[1]	Average vegetation height greater than 12-inches, emergence of trees or woody vegetation,	Annually, before wet season starts	Annually	Cut vegetation and remove trimmings. Remove any trees, or woody vegetation.
	Soil Repair	Evidence of erosion	Annually, before wet season starts	Annually	Reseed/revegetate barren spots before wet season. Replace soil mulch.
	Trash and Debris	Trash and Debris present	Annually, before wet season starts	Annually	Remove and dispose of trash and debris
	Sediment Management	Sediment depth exceeds 10% of the facility design or standing water for more than 96 hours	Annually, 96 hours after a target storm event	Estimated 10 – 75 years	Remove and properly dispose of sediment. Regrade if necessary.
	General Maintenance Inspection	Inlet/outlet structures, side slopes or other features damaged, erosion, burrows, emergence of trees or woody vegetation, graffiti or vandalism, fence damage, etc.	Annually, before wet season starts	Annually	Corrective action before wet season. Consult engineers if immediate solution is not evident.
Extended Detention Basin	Vegetation Management[1]	Emergence of trees or woody vegetation	Annually, before wet season starts	Annually	Remove any trees, or woody vegetation.
	Standing Water	Standing water for more than 96 hours	Annually, 96 hours after a target storm event	Annually	Remove and properly dispose of sediment.
	Trash and Debris	Trash and Debris present	Annually, before wet season starts	Annually	Remove and dispose of trash and debris
	Sediment Management	Sediment depth exceeds 10% of the facility design	Annually, before wet season starts	Estimated 10-100 years	Remove and properly dispose of sediment. Regrade if necessary.
	General Maintenance Inspection	Inlet/outlet structures, side slopes or other features damaged, erosion, burrows, emergence of trees or woody vegetation, graffiti or vandalism, fence damage, etc.	Annually, before wet season starts	Annually	Corrective action before wet season. Consult engineers if immediate solution is not evident.

BMP	Treatment System Component				
	Routine Action	**Maintenance Indicator**	**Measurement Frequency**	**Frequency**	**Maintenance Activity**
Infiltration Basin	Vegetation Management[1]	Emergence of trees or woody vegetation	Annually, 96 hours after a target storm event	Annually	Remove any trees, or woody vegetation.
	Trash and Debris	Trash and Debris present	Annually, before wet season starts	Annually	Remove and dispose of trash and debris
	Sediment Management	Sediment depth exceeds 10% of the facility design or drain time exceed 96 hours.	Annually, before wet season starts	Estimated 10 – 75 years	Remove and properly dispose of sediment. Regrade if necessary.
	General Maintenance Inspection	Inlet/outlet structures, side slopes or other features damaged, erosion, burrows, emergence of trees or woody vegetation, graffiti or vandalism, fence damage, etc.	Annually, before wet season starts	Annually	Corrective action before wet season. Consult engineers if immediate solution is not evident.
	Vegetation Management[1]	Emergence of trees or woody vegetation	Annually, 96 hours after a target storm event	Annually	Remove any trees or woody vegetation.
Constructed Wetland	Vegetation Management	Vegetation coverage/density impeding flow	Annually, 96 hours after a target storm event	Annually	1. Have a biologist survey the pond to determine if any birds are nesting or presence of sensitive animals. 2. Lower and maintain water level to expose the area to be maintained. 3. Mechanically remove all vegetation and dispose at appropriate area. 4. Restock mosquito fish as recommended by vector control.
	Trash and Debris	Trash and Debris present	Annually, before wet season starts	Annually	Remove and dispose of trash and debris
	Sediment Management	Sediment depth exceeds 10% of the facility design	Annually, before wet season starts	Estimated 10 – 75 years	Remove and properly dispose of sediment.
	General Maintenance Inspection	Inlet/outlet structures, side slopes, other features damaged, erosion, burrows, emergence of trees, woody vegetation, graffiti, vandalism, etc.	Annually, before wet season starts	Annually	Corrective action before wet season. Consult engineers if immediate solution is not evident.

BMP	Treatment System Component				
	Routine Action	**Maintenance Indicator**	**Measurement Frequency**	**Frequency**	**Maintenance Activity**
Biofiltration Swale	Vegetation Management[1]	Average vegetation height greater than 12-inches, emergence of trees or woody vegetation,	Annually, 96 hours after a target storm event	Annually	Cut vegetation to an average height of 6 inches and remove trimmings, trees, or woody vegetation.
	Vegetation Repair	Less than 65 percent coverage in swale	Annually, before wet season starts	Annually	Reseed/revegetate barren spots before wet season.
	Trash and Debris	Trash and Debris present	Annually, before wet season starts	Annually	Remove and properly dispose of sediment.
	Sediment Management	Sediment at or near vegetation height, channeling of flow, inhibited flow due to slope change	Annually, before wet season starts	Estimated 10 – 65 years	Remove and properly dispose of sediment. If flow is channeled, regrade as necessary.
	General Maintenance Inspection	Inlet/outlet structures, side slopes or other features damaged, significant erosion, burrows, emergence of trees or woody vegetation, graffiti or vandalism, fence damage, etc.	Annually, before wet season starts	Annually	Corrective action before wet season. Consult engineers if immediate solution is not evident.
Sand Filter	Drain time	Drain time exceeds 96 hours	Annually, 96 hours after a target storm event	Estimated every 10-15 years	Drain facility. Remove and dispose of sediment, trash and debris. Check orifice. Notify engineer to consider removing top 2 inches of media and dispose of sediment. Restore media depth to 18 inches when overall media depth drops to 12 inches. Complete before wet season.
	Trash and Debris	Trash and Debris present	Annually, before wet season starts	Annually	Remove and dispose of trash and debris
	Sediment Management	Sediment depth exceeds 10% of volume within sedimentation chamber.	Annually, before wet season starts	Estimated every 10-75 years	Remove and properly dispose of sediment.
	General Maintenance Inspection	Inlet/outlet structures, filter fabric, erosion, burrows, emergence of trees or woody vegetation, graffiti or vandalism, fence damage, etc.	Annually, before wet season starts	Annually	Corrective action before wet season. Consult engineers if immediate solution is not evident.

[1]Optional for aesthetics.

Routine Operation and Maintenance Activities

A maintenance checklist for each facility will be developed for Project Specific WQMPs and all routine maintenance activities will be recorded in a maintenance log. Various activities not covered in the table are described below.

Pump/Valve Inspection, Adjustment and Maintenance

Some sites might require the use of pumps, valves and other mechanical equipment. Such equipment requires regular, scheduled preventive maintenance and adjustment. Emergency repairs may also be required. Routine work would typically be performed in conjunction with the monthly site inspections.

Any pipeline, mechanical, or electrical equipment installed for a structural BMP facility will have expected useful lives of 1 to 50 years. As a result, at some point in time all equipment will need to be removed and replaced or upgraded. To the extent practical, such work will be scheduled outside nesting seasons of species of concern. However, it is possible that emergency removal/replacement will be required if such equipment fails suddenly.

Irrigation System Inspection and Adjustment

Some structural BMP sites may require temporary or permanent irrigation systems for transitional vegetation areas. At these sites, the irrigation system will be inspected and adjusted during the regular, scheduled site inspection by the site inspector.

Integrated Pest/Plant Management

Although the dry extended detention basins, bioretention areas, and vegetated swales will be designed to prevent standing water to the extent feasible, any natural environment is susceptible to harmful insect invasion. Whether harmful to property, person, or wildlife, some insects and other undesirable species (e.g., mosquitos, bullfrogs) will need to be managed. Management may include measures from physical management to using natural predators to chemical or biological spraying. Some methods that are more natural include intermittent flooding and drying, vegetation thinning, and installation of "swallow boxes" and "bat boxes" to attract more swallows and bats, both of which feed voraciously on mosquitoes.

Bullfrogs and other invasive species will be managed per the Invasive Species Control Plan in the Ranch Plan EIR/SAMP EIS. Although the dry extended detention basins will be designed to prevent standing water, in the event that standing water does occur, bullfrog control will occur in accordance with the U.S. Army Corps of Engineers Special Condition D.5 from the RMV Long Term 404 Permit, which states:

"The permittee shall eradicate bullfrogs from any water quality treatment basin within 0.5 km of streams known to have arroyo toads. The eradication shall occur at the very least from September to mid-October to interrupt the annual breeding cycle. Permittee may use a variety of approaches to ensure compliance with this condition. Eradication efforts shall be monitored annually as part of the Aquatic Resources Adaptive Management Plan. If eradication efforts are not successful, the permittee shall cause the water quality treatment basin to be dry from September to mid-October by diverting dry season runoff to a collection system for re-use for irrigation purposes."

While more natural methods will be the methods of choice, it may be necessary at times to use sprays. Any application of chemical or biological agents will be performed by certified pesticide applicators in accordance with manufacturer recommendations and applicable laws and regulations. Maintenance activities for the control of mosquitoes may entail the application of Bacillus thuringiensis israeliensus (Bti), a natural microbial pesticide.

Because the water quality basins are not anticipated to retain stormwater mosquitos are not anticipated. If basins were to fail and retain water beyond 96 hours immediate corrective action will be taken. Specific remediation activities will be covered in the Sub-Area and Project Specific WQMPs. Some of the activities include, but are not limited to: inlet and outlet maintenance, sub-surface soil removal and replacement, pumping and draining ponded water, or contacting the local vector control authority.

Structural Modifications

Structural modifications may be required at the sites as part of the adaptive management approach. The purposes of such modifications could include improvement of treatment BMP performance, upsizing or downsizing of facilities, or improvement of uses such as flood control. Plans for structural modifications will be submitted to appropriate regulatory agencies in compliance with permit requirements.

Long Term Adaptive Management Program

An adaptive management approach will be used to evaluate whether the WQMP elements are functioning as intended and to implement corrective procedures when needed. The issues addressed by this adaptive management approach are management considerations relating to pollutants of concern and hydrologic conditions of concern. The adaptive management plan entails the following elements:

- BMP Inspection and Performance Monitoring. Routine inspection and monitoring of the combined control system components is required to establish that they are being properly maintained and functioning as intended.

- Hydrologic Monitoring and Streamcourse/Riparian System Monitoring. Routine monitoring of the general hydrologic conditions is needed to ascertain any changes

in the hydrologic regime and subsequent change to stream stability and geomorphology.

- WQMP Review and Evaluation. Annual review of the inspection and monitoring data will be conducted to determine if there is a need for corrective action, to evaluate impacts due to changes in watershed conditions on the hydrologic regime or BMP performance, and in general to evaluate if the WQMP is effective in meeting the planning objectives.

- Corrective Measures. Corrective measures will be undertaken for specific problems or conditions of concern identified in the review and evaluation. Depending on the nature of the problem, corrective measures could involve modification of the BMP design, operation, or maintenance, and/or implementation of additional BMPs. The effectiveness of the corrective measures will themselves be evaluated through continued inspection and monitoring. Thus, the management approach is adaptive to specific problems or conditions as they arise. Such problems or conditions are identified through ongoing inspection, monitoring, documentation, and evaluation.

- Documentation and Reporting. Documentation of all operation, maintenance, inspection, and monitoring activities will establish a continuous record of the condition of combined control system facilities and the health of the hydrologic regime. All records will be available to the public and regulatory and resource agencies.

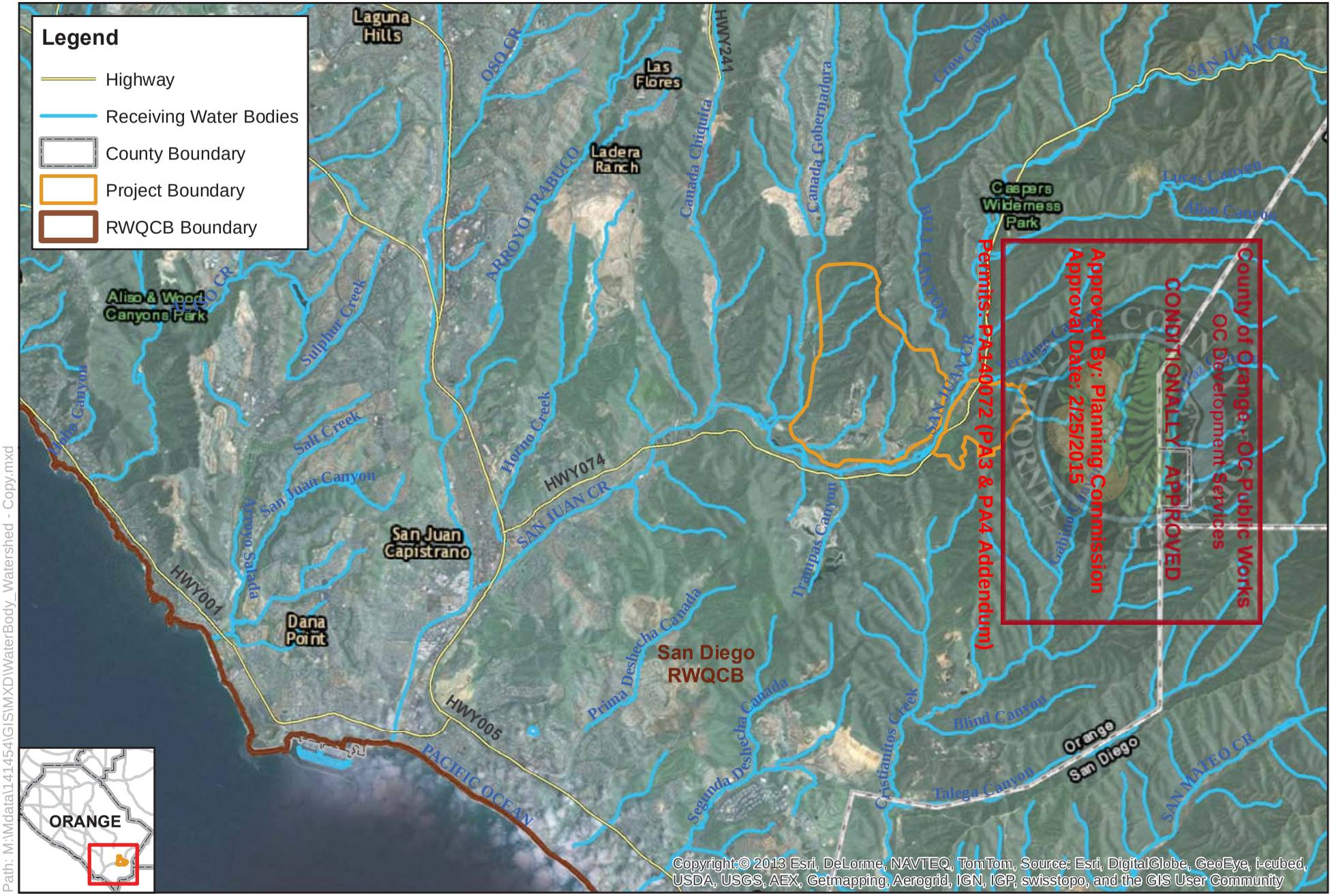
Section XI includes a general overview for future monitoring plans. A detailed adaptive management plan including specific monitoring frequencies and plans for PA 3 and PA 4 will be included with the Project Specific WQMP.

Section VI Location Map, Plot Plan, and BMP Details

The figures that are included in this Master Area Plan WQMP include:

- Figure 1: Project Location and Receiving Water Map
- Figure 2: Soil Map
- Figure 3: Water Quality Treatment Plan

BMP details will be included in the Project-level WQMP.



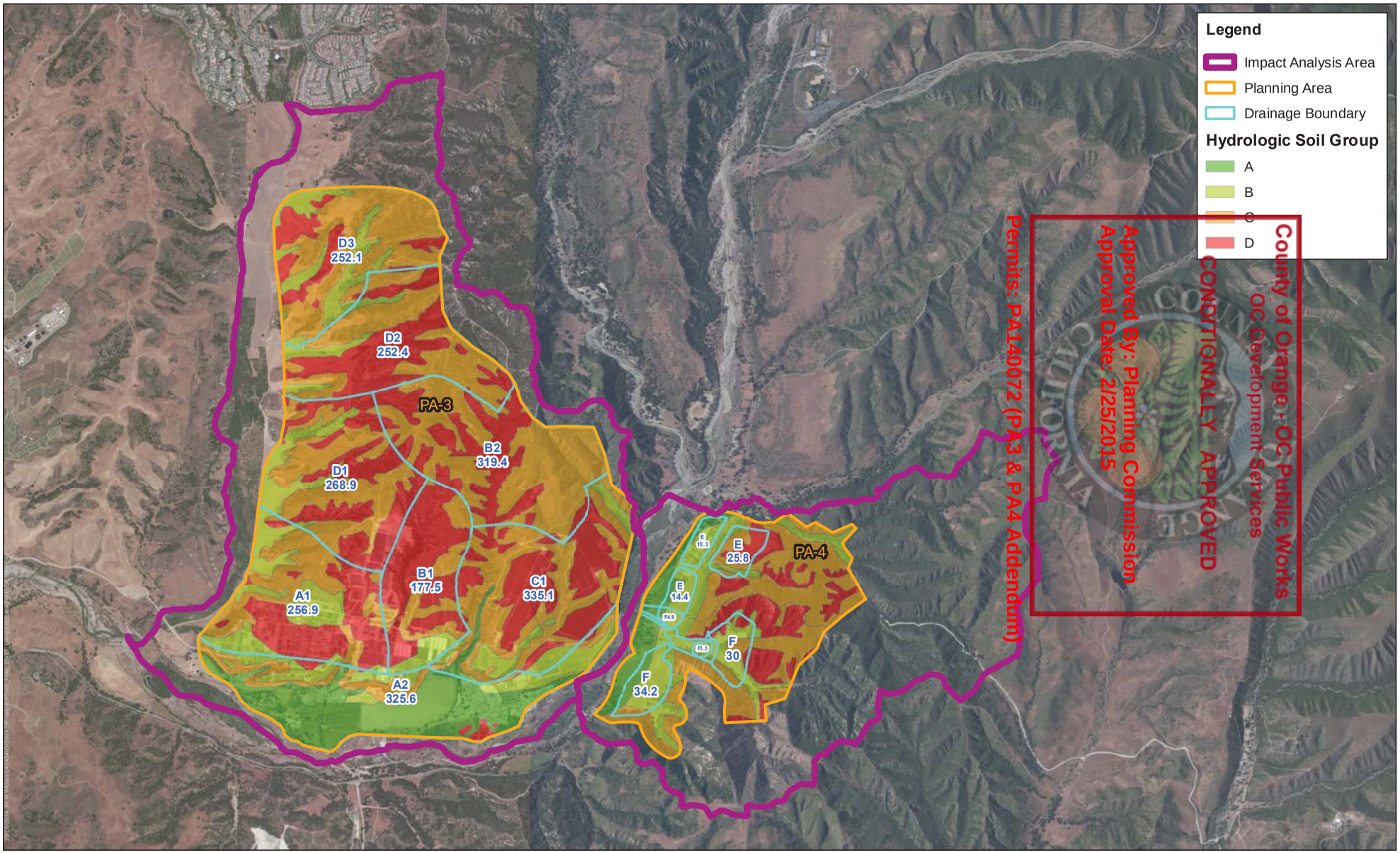
Path: M:\Mdata\141454\GIS\MXD\WaterBody_Watershed - Copy.mxd

0 1 2 4 Miles

Source: ESRI Virtual Aerial, SWRCB, RWQCB

Project Location and Receiving Water Map

Figure 1



Michael Baker INTERNATIONAL

0 1,000 2,000 4,000 Feet

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Soils Map

Figure 2

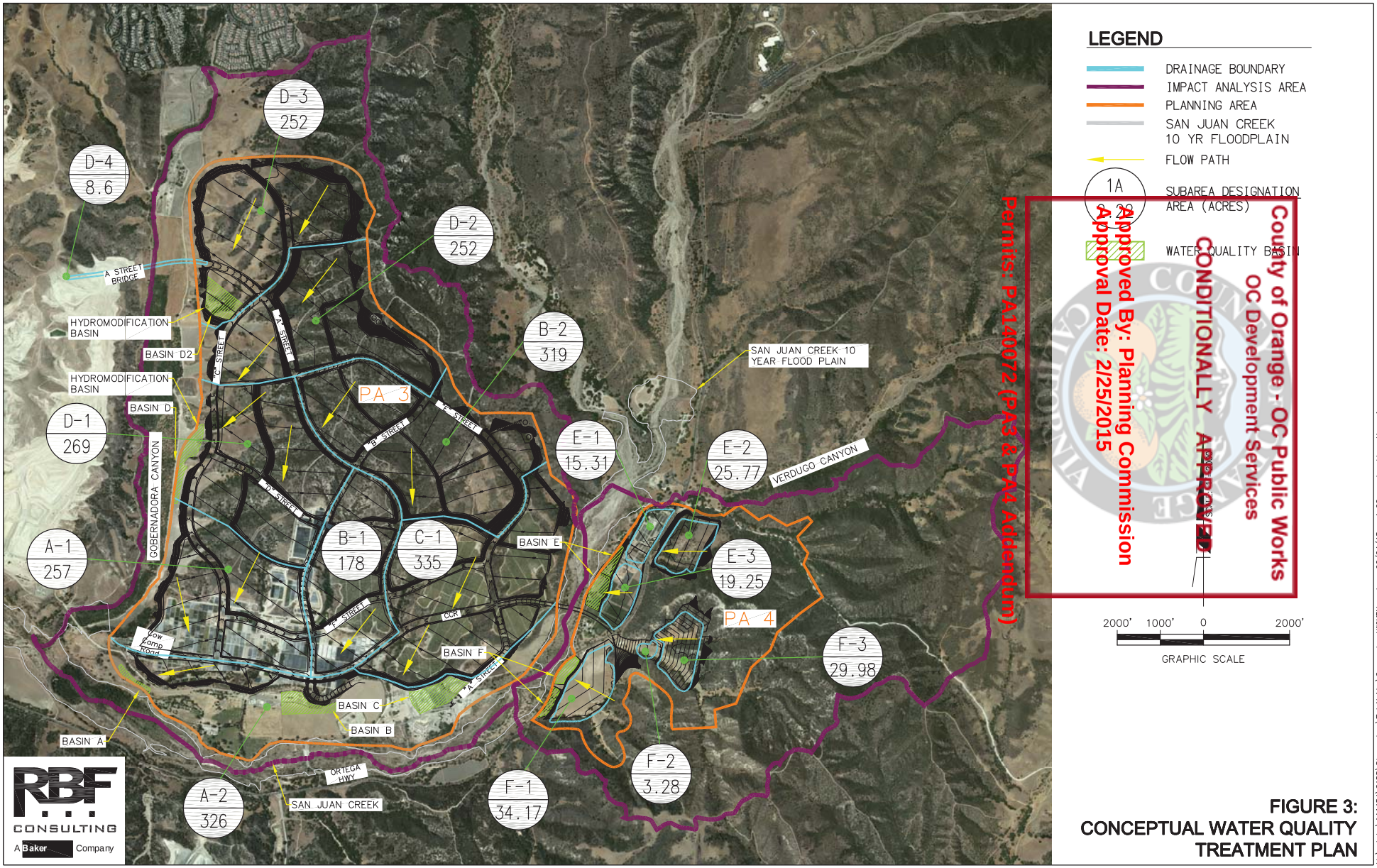


FIGURE 3:
CONCEPTUAL WATER QUALITY TREATMENT PLAN

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Section VII Educational Materials

The following is a list of topics for education materials that can be provided with the Project-level WQMP:

- The use of chemicals (including household type) that should be limited to the property, with no discharge of specified wastes via hosing or other direct discharge to gutters, catch basins, and storm drains.
- The proper handling of material such as fertilizers, pesticides, cleaning solutions, paint products, automotive products, and swimming pool chemicals.
- The environmental and legal impacts of illegal dumping of harmful substances into storm drains and sewers.
- Alternative household products that are safer to the environment.
- Household hazardous waste collection programs.
- Used oil-recycling programs.
- Proper procedures for spill prevention and clean up.
- Proper storage of materials that pose pollution risks to local waters.
- Carpooling programs and public transportation alternatives to driving.

Section VIII Construction-Phase Water Quality Impacts

The potential impacts of construction activities, construction materials, and non-stormwater runoff on water quality during the construction phase of Planning Area 3 and 4 focus primarily on sediment (TSS and turbidity) and certain non-sediment related pollutants. Construction related activities that are primarily responsible for sediment releases are related to exposing soils to potential mobilization by rainfall/runoff and wind. Such activities include removal of vegetation from the site, grading of the site, and trenching for infrastructure improvements. Environmental factors that affect erosion include topographic, soil, and rainfall characteristics. Non sediment-related pollutants that are also of concern during construction relate to construction materials and non-stormwater flows and include construction materials (e.g., paint, stucco, etc.); chemicals, liquid products, and petroleum products used in building construction or the maintenance of heavy equipment; and concrete-related pollutants.

The project will result in a disturbance of soil that will require compliance with the NPDES General Permit, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activities (Construction General Permit or CGP) (Order Number 2009-0009-DWQ, NPDES Number CAS000002). This Statewide CGP regulates discharges from construction sites that disturb one or more acres of soil. By law, all stormwater discharges associated with construction activity where clearing, grading, and excavation results in a soil disturbance of at least one acre of total land area must comply with the provisions of this NPDES Permit, and develop and implement an effective Stormwater Pollution Prevention Plan (SWPPP). The permit requires:

- Electronic submittal of the Permit Registration Documents (PRDs) to the SWRCB at least 30 days before the start of construction, which includes submittal of a Notice of Intent (NOI), risk assessment, site map, SWPPP, annual fee, and a signed certification statement;
- Preparation and implementation of a SWPPP; and,
- Electronic submittal of a Notice of Termination (NOT) to the SWRCB upon completion of construction and stabilization of the site.

Based on the proposed project's location and what water body it drains to, a risk level will be assigned to the project and indicate what level of monitoring will be required. Based on the information currently available, this project will most likely be a risk level 2 project, which will require technology-based numeric action levels (NALs) for pH and turbidity. A risk level 2 is considered medium risk due to the project being located in an area with highly erosive soils, but no sediment impaired receiving waters. Risk level determination will be determined on a Project-level basis.

The SWPPP developed for the project will meet the requirements of the Statewide CGP and local water quality requirements in effect during the construction phase of the project.

The SWPPP and erosion control plans will show a list and location of temporary BMPs to prevent the discharge of pollutants from non-stormwater and stormwater runoff.

Construction activities have the potential to impact Cañada Chiquita and San Juan Creek if runoff and the sediment it could transport are not controlled. Erosion (caused by wind and water), waste management, and vehicle operations are all potential sources of pollutants from construction of the project. The pollutants of concern during construction typically include:

- Total Suspended Solids,
- Nutrients,
- Sediment,
- Litter,
- Petroleum products,
- Concrete waste (dry and wet),
- Sanitary waste; and
- Chemicals.

Excess amounts of these pollutants may lead to Cañada Chiquita and San Juan Creek not meeting their beneficial uses for Agriculture Supply (AGR), Industrial Service Supply (IND), Contact Water Recreation (REC-1), Non-Contact Water Recreation (REC-2), Warm Freshwater Habitat (WARM), Cold Freshwater Habitat (COLD), and Wildlife Habitat (WILD). To prevent these potential short-term impacts of construction, temporary construction BMPs will be used to keep sediment, construction wastes, and vehicle wastes from affecting downstream water bodies. The SWPPP developed for the proposed project will meet the requirements of the CGP.

Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. Under the CGP, the project is required to prepare a SWPPP and implement erosion and sediment control BMPs detailed in the SWPPP to be implemented during construction. Waste and materials management, non-stormwater management, training and education, as well as maintenance, monitoring, and inspection activities are also covered in the SWPPP.

Section IX BMP Sizing Criteria

This WQMP is being prepared to satisfy requirements set forth in the Ranch Plan EIR. Per Mitigation Measure 4.5-1 in the EIR, specific mitigation measures must be taken that address flood protection, surface hydrology, water quality, and stream stability for a broad range of storm events. Sizing criteria discussed in this section is focused to meet the goals and guidelines set forth in the Mitigation Measure 4-5.1. BMPs discussed in Section IV must be implemented to meet this criteria along with the water quality treatment requirements, IHC requirements, as well as the HCOC requirements set forth in the Ranch Plan Conceptual WQMP.

Water Quality Treatment

Priority Projects require LID BMPs to be implemented and sized to retain the DCV from the project site. If LID retention BMPs are not feasible to design for the full DCV, biofiltration BMPs are required and must be sized to hold at least 0.75 times the design storm volume that is not retained onsite by LID retention BMPs. When a project is subject to hydromodification requirements, the interim hydromodification control (IHC) requirements typically govern.

The DCV is calculated using the Simple Method Runoff Coefficient for Volume-Based BMP Sizing per Appendix III.1 of the Orange County Technical Guidance Document. The DCV shall be calculated as

V=C x d x A x 43560 square feet/acre x 1/12 inches/foot

Where:

V = runoff volume during the design storm event, cf
C = runoff coefficient = (0.75 × imp + 0.15)
imp = impervious fraction of drainage area (ranges from 0 to 1)
d = storm depth (inches)
A = tributary area (acres)

Hydrologic Conditions of Concern

Priority Projects that create an HCOC are subject to the South OC HMP requirements. As previously discussed in Section II of this report, these requirements necessitate the comparison between the pre-development (naturally occurring) and post-project duration and flow rates for the 2, 5, and 10-year storm events.

The ROMP, that has been approved, includes an exemption for discharges that are conveyed directly to the 10-year flood plain of San Juan Creek, as discussed in Section II. Sub-drainage Areas A, B, C, E and F discharge directly into San Juan Creek, and are therefore not creating a HCOC. Sub-drainage Area D is discharging into Gobernadora

Canyon, which is a natural stream vulnerable to hydromodification. Therefore Sub-drainage Area D is subject to meet the HMP requirements. Drainage patterns, BMP implementation, and design requirements for Area D will be consistent with the ROMP and provided in the Sub-Area Plan WQMP phase. Figure 10-6 in Attachment 3 depicts the locations for each drainage area as well as the anticipated outfall location. As previously discussed, the interim South OC HMP requirements state, "An HCOC is considered to be mitigated when on-site or regional hydromodification controls are provided such that such that:

- For flow rates from 10 percent of the 2-year storm event to the 5-year storm event, the post-project flows do not exceed pre-development (naturally occurring) peak flows.
- For flow rates from the 5-year storm event to the 10-year storm event the post-project peak flows may exceed pre-development (naturally occurring) flows by up to 10 percent for a 1-year frequency interval."

South OC HMP requirements can be met using the South Orange County Hydrology Model (SOCHM). SOCHM has been developed to help applicants comply with hydromodification requirements and has been approved by the SDRWQCB. SOCHM is a continuous simulation model that integrates local rainfall data and uses a 1-hour time step to design stormwater BMPs. SOCHM allows the user to match the flow duration curve for the selected range of flows while incorporating locally preferred BMPs.

Flood Control

The ultimate condition hydrology for PA 3 and PA 4 will meet the existing condition flow rates at each of the outfall locations. The mitigation requirements will be consistent with the EIR and the Final Runoff Management Plan (ROMP). The mitigation will be achieved through detention, retention, and infiltration or a combination of each. Hydrologic analysis for the flood control facilities will be prepared by RBF Consulting in accordance with the 1986 Orange County Hydrology Manual and 1995 Orange County Hydrology Manual Addendum No. 1. Runoff hydrographs will be prepared at each discharge location for all six Sub-Areas. Analyses will include 100-year high confidence and 100-, 50-, 25-, 10-, 5-, and 2-year expected values. The development must demonstrate that increases in peak discharges, increases in runoff volume, channel aggradation/degradation, erosion, and channel stability do not produce adverse impacts during the aforementioned storm events. Guidelines covered in Mitigation Measure 4.5-1 shall be closely followed throughout the PA 3 and PA 4 design and planning stage as well as the sub-area and project specific level studies.

Water Balance

Volumetric mitigation for PA 3 and PA 4 to meet the requirements of provision 4.5-1 of the EIR will be addressed when appropriate. Based on the 2004 PWA report, Hydrologic

Comparison of Baseline and Alternative Land Use Conditions for the San Juan and San Mateo Watersheds:

> "The distributed "infiltration" facilities are intended to provide both water quality management and flow management during small to medium rainstorms. In addition to water quality management, they are designed to mimic the annual water balance, maintain groundwater infiltration, and reduce artificial dry season streamflow during smaller more frequent rainstorm events (generally less than 2 year frequency). They will also provide some peak flow rate and flow volume reduction during larger (2- to 100-yr) design events. These facilities are described in the Geosyntec report (Geosyntec, 2004).
>
> During more severe flood events (2- to 100-year events), excess runoff will be temporarily stored in larger detention facilities, and released at lower flow rates to prevent flow peak increases to local or regional channel systems. These larger basins will also provide water quality benefits by trapping additional sediment and pollutants prior to discharge into the local and regional streams. This is considered an additional benefit, as the existing water quality management facilities have been designed to provide the required level of treatment. While the water quality and flood management elements will be designed to function as an integral system, they will be considered separately for management and maintenance. The flood facilities will be designed and maintained in accordance with the county flood program directions on sizing, design and maintenance. The water quality facilities will be designed in accordance with RWQCB requirements, and those of the county water quality program.
>
> The primary mitigation approach for sediment transport/channel stability issues is to manage the hydrologic regime. By minimizing the alteration of channel-forming flow events (up to the 2-year event), preventing an increase in peak flows, and reducing volume increases, the channels will not be subject to significantly altered sediment transport characteristics.

The water balance will be completed as part of the PA 3 and PA 4 Project Specific WQMPs and will meet the requirements of provision 4.5-1 of the EIR. The water balance study will not be included in this conceptual Master Area Plan WQMP but the analysis will be finalized for the next level WQMP.

Summary

Table 10 lists the area and estimated imperviousness of the drainage area tributary to each treatment BMP. These estimates were used to determine the preliminarily sizing of the treatment BMPs. A conservative approach was taken for the percent imperviousness of the proposed land use. As more information is attained per the land use, a more accurate evaluation of the imperviousness will be represented. Sizing criteria and results for each Subarea and the associated BMPs are provided in Table 11. Conceptual grading for all basins for PA 3 and PA 4 will be provided in the PA 3 and PA 4 Master Area Plan WQMP. Drainage patterns and BMP implementation for Sub-drainage Area D will be consistent with the ROMP and provided in the Sub-Area Plan WQMP.

Table 10: Treatment BMP Drainage Areas

Drainage Area ID	Area (acres)	Percent Impervious	Potential Basin Type	Design Criteria	
				Water Quality DCV (acre-feet)	Hydromodification Volume (acre-feet)
A	582.7	80%	Infiltration Basin	31.87	NA
B	497.4	80%	Infiltration Basin	27.2	NA
C	335.1	80%	Infiltration Basin	18.32	NA
D	781.6	80%	Infiltration Basin/ Biofiltration Basin/Extended Detention Basin	43.7	TBD
E	60.3	80%	Infiltration Basin	3.58	NA
F	67.4	80%	Infiltration Basin	4.06	NA

A location for each BMP and their associated drainage area is provided in Figure 3. The Simple DCV Sizing Method for each basin is provided for each sub-area in "Worksheet B." The minimum area required for the BMP was calculated in Worksheet B. Two factors contribute to the minimum area required: drawdown time and the depth of the BMP. All basins have a drawdown time under 48 hours. Additionally, 35% of the basin areas in Figure 3 account for non-treatment area such as access roads, perimeter berms, forebays, etc. The minimum area required for the BMP in Worksheet B accounts for the other 65% of the BMP. Infiltration basin A-1 will use the flood control basin as a forebay in order to maximize the area for infiltration. In this instance, 90% of the basin area in Figure 3 accounts for the treatment BMP. The other 10% will account for maintenance access and perimeter berms. "Worksheet H" is provided to summarize the design infiltration rate and factor of safety for each basin.

Table 11: BMP Sizing Summary

PA	Area Designation	BMP ID, Type	Minimum BMP Area (acre)	TDA (acre)	Design Capture Volume (ac-ft)
3	A-1	Basin A, Infiltration	2.00	256.81	14.04
3	A-2	Local LID*	-	325.90	17.82
3	B-1	Basin B, Infiltration	9.00	178.00	9.73
3	B-2			319.36	17.47
3	C-1	Basin C, Infiltration	5.06	335.07	18.32
3	D-1	Basin D, Infiltration	5.06	268.91	14.71
3	D-2			252.35	13.80
3	D-3	Basin D2, Biofiltration/Extended Detention Basin	5.07	252.14	13.79
3	$D\text{-}4_{BRIDGE}$			8.60	0.56
4	E-1	Basin E, Infiltration	5.00	15.31	0.92
4	E-2			25.77	1.55
4	E-3			19.25	1.11
4	F-1	Basin F, Infiltration	6.00	34.17	2.06
4	F-2			3.28	0.20
4	F-3			29.98	1.80

*Drainage area A-2's proposed delineation has not been determined. For that reason, local LID BMPs will be implemented when sub drainage areas are capable of being delineated. Additionally, some areas are left undisturbed and will not be required to have LID BMPs.

Impervious percentages were assumed based on the OC hydrology manual and the expected land uses. A conservative impervious percentage of 80% was used for PA 3, while PA 4 has more impervious percentage due to the commercial/industrial land use. PA 4's impervious percentages are assumed to be 88% and 90% for E and F, respectively.

Worksheet B: Simple Design Capture Volume Sizing Method

Sub-Area A-1 Infiltration Basin

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	d=	0.875	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches)	d_{HSC}=	0.000	inches
3	Calculate the remainder of the design capture storm	$d_{remainder}$=	0.875	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	A=	257.00	acres
2	Enter Project Imperviousness, imp (unitless)	imp=	0.80	
3	Calculate runoff coefficient, C= (0.75 x imp) + 0.15	C=	0.75	
4	Calculate runoff volume, V_{design} = (A x 43,560) x ($d_{remainder}$ / 12) x C	V_{design}=	612222	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{measured}$ (in/hr)	$K_{measured}$=	8.20	In/hr
2	Enter combined safety factor from Worksheet H, S_{final}	S_{final}=	2.25	
3	Calculate design infiltration rate, K_{design} = $K_{measured}$ / S_{final}	K_{design}=	3.64	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	T=	34.22	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time	D_{max}=	10.38	feet
6	Calculate minimum area required for BMP (sq-ft), A_{min} =	A_{min}=	58,982	sq-ft

Note: A-2 is not calculated because it is downstream of all disturbed land. In the event A-2 needs water quality treatment and hydromod, local point source BMPs will be implemented.

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Infiltration Basin

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25
		Predominant soil texture	0.25	1	0.25
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, S_A = ∑p			1
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/ expected sediment loads	0.25	2	0.5
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, S_B = ∑p			2.25
Combined Safety Factor, S_{TOT}= S_A x S_B					2.3
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					1.00
Design Infiltration Rate, in/hr, K_{DESIGN} = K_M / S_{TOT}					0.44

Worksheet B: Simple Design Capture Volume Sizing Method

Sub-Area B Infiltration Basin

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	d=	0.875	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches)	d_{HSC}=	0.000	inches
3	Calculate the remainder of the design capture storm	$d_{remainder}$=	0.875	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	A=	497.00	acres
2	Enter Project Imperviousness, imp (unitless)	imp=	0.80	
3	Calculate runoff coefficient, C = (0.75 x imp) + 0.15	C=	0.75	
4	Calculate runoff volume, V_{design}= (C x $d_{remainder}$ x A x 43560 x (1/12))	V_{design}=	1183947	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{measured}$ (in/hr)	$K_{measured}$=	19.20	In/hr
2	Enter combined safety factor from Worksheet H, S_{final}	S_{final}=	2.81	
3	Calculate design infiltration rate, K_{design} = $K_{measured}$ / S_{final}	K_{design}=	6.83	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	T=	7.72	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time	D_{max}=	4.394	feet
6	Calculate minimum area required for BMP (sq-ft), A_{min} =	A_{min}=	269,475	sq-ft

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Infiltration
Basin

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25
		Predominant soil texture	0.25	2	0.5
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, S_A = ∑p			1.25
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/ expected sediment loads	0.25	2	0.5
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, S_B = ∑p			2.25
Combined Safety Factor, S_{TOT}= S_A x S_B					2.8
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					19.20
Design Infiltration Rate, in/hr, K_{DESIGN} = K_M / S_{TOT}					6.83

Worksheet B: Simple Design Capture Volume Sizing Method

Sub-Area C Infiltration Basin

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	$d=$	0.875	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches)	$d_{HSC}=$	0.000	inches
3	Calculate the remainder of the design capture storm	$d_{remainder}$	0.875	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	$A=$	335.00	acres
2	Enter Project Imperviousness, imp (unitless)	$imp=$	0.80	
3	Calculate runoff coefficient, C= (0.75 x imp) + 0.15	$C=$	0.75	
4	Calculate runoff volume, V_{design}= (C x $d_{remainder}$ x A x 43560 x (1/12))	$V_{design}=$	798033	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{measured}$ (in/hr)	$K_{measured}=$	4.80	In/hr
2	Enter combined safety factor from Worksheet H, S_{final}	$S_{final}=$	2.81	
3	Calculate design infiltration rate, $K_{design} = K_{measured} / S_{final}$	$K_{design}=$	1.71	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	T=	14.9	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time	$D_{max}=$	2.129	feet
6	Calculate minimum area required for BMP (sq-ft), A_{min} =	$A_{min}=$	374840	sq-ft

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Infiltration Basin

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25
		Predominant soil texture	0.25	2	0.5
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, $S_A = \sum p$			1.25
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/ expected sediment loads	0.25	2	0.5
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, $S_B = \sum p$			2.25
Combined Safety Factor, $S_{TOT} = S_A \times S_B$					2.8
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					19.20
Design Infiltration Rate, in/hr, $K_{DESIGN} = K_M / S_{TOT}$					6.83

Worksheet B: Simple Design Capture Volume Sizing Method

Sub-Area D1 & D2 Infiltration Basin

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	d=	0.875	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches)	d_{HSC}=	0.000	inches
3	Calculate the remainder of the design capture storm	$d_{remainder}$=	0.875	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	A=	521	acres
2	Enter Project Imperviousness, imp (unitless)	imp=	0.80	
3	Calculate runoff coefficient, C= (0.75 x imp) + 0.15	C=	0.75	
4	Calculate runoff volume, V_{design}= (C x $d_{remainder}$ x A x 43560 x (1/12))	V_{design}=	1,241,120	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{measured}$ (in/hr)	$K_{measured}$=	5.10	In/hr
2	Enter combined safety factor from Worksheet H, S_{final}	S_{final}=	2.81	
3	Calculate design infiltration rate, K_{design} = $K_{measured}$ / S_{final}	K_{design}=	1.81	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	T=	37.28	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time	D_{max}=	5.623	feet
6	Calculate minimum area required for BMP (sq-ft), A_{min} =	A_{min}=	220,715	sq-ft

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Infiltration Basin

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	1	0.25
		Predominant soil texture	0.25	2	0.5
		Site soil variability	0.25	1	0.25
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, S_A = ∑p			1.25
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/ expected sediment loads	0.25	2	0.5
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, S_B = ∑p			2.25
Combined Safety Factor, S_{TOT}= S_A x S_B					2.8
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					5.10
Design Infiltration Rate, in/hr, K_{DESIGN} = K_M / S_{TOT}					1.81

Worksheet B: Simple Design Capture Volume Sizing Method

Sub-Area E Infiltration Basin

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	d=	0.875	inches
2	Enter the effect of provided HSCs, d_{HSC} (inches)	d_{HSC}=	0.000	inches
3	Calculate the remainder of the design capture storm	$d_{remainder}$=	0.875	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	A=	60.33	acres
2	Enter Project Imperviousness, imp (unitless)	imp=	0.88	
3	Calculate runoff coefficient, C= (0.75 x imp) + 0.15	C=	0.81	
4	Calculate runoff volume, V_{design} = (A x 43,560 sf/ac) x C x $d_{remainder}$ / (12 in/ft)	V_{design}=	155796	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{measured}$ (in/hr)	$K_{measured}$=	3.00	In/hr
2	Enter combined safety factor from Worksheet H, S_{final}	S_{final}=	5.00	
3	Calculate design infiltration rate, K_{design} = $K_{measured}$ / S_{final}	K_{design}=	0.60	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	T=	12.5	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time	D_{max}=	0.6253	feet
6	Calculate minimum area required for BMP (sq-ft), A_{min} =	A_{min}=	249,158	sq-ft

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Infiltration Basin

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	3	0.75
		Predominant soil texture	0.25	2	0.5
		Site soil variability	0.25	2	0.5
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, S_A = ∑p			2
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/ expected sediment loads	0.25	3	0.75
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, S_B = ∑p			2.5
Combined Safety Factor, S_{TOT}= S_A x S_B					5.0
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					3.00
Design Infiltration Rate, in/hr, K_{DESIGN} = K_M / S_{TOT}					0.60

Worksheet B: Simple Design Capture Volume Sizing Method

Sub-Area F Infiltration Basin

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter design capture storm depth from Figure III.1, d (inches)	d=	0.875	inches
2	Enter the effect of proposed HSCs, d_{HSC} (inches)	d_{HSC}=	0.000	inches
3	Calculate the remainder of the design capture storm	$d_{remainder}$=	0.875	inches
Step 2: Calculate the DCV				
1	Enter Project area tributary to BMP (s), A (acres)	A=	67.43	acres
2	Enter Project Imperviousness, imp (unitless)	imp=	0.90	
3	Calculate runoff coefficient, C= (0.75 x imp) + 0.15	C=	0.83	
4	Calculate runoff volume, V_{design}= (C x $d_{remainder}$ x A x 43560 x (1/12))	V_{design}=	176694	cu-ft
Step 3: Design BMPs to ensure full retention of the DCV				
Step 3a: Determine design infiltration rate				
1	Enter measured infiltration rate, $K_{measured}$ (in/hr)	$K_{measured}$=	3.00	In/hr
2	Enter combined safety factor from Worksheet H, S_{final}	S_{final}=	5.00	
3	Calculate design infiltration rate, K_{design} = $K_{measured}$ / S_{final}	K_{design}=	0.60	In/hr
Step 3b: Determine minimum BMP footprint				
4	Enter drawdown time, T (max 48 hours)	T=	21.3	Hours
5	Calculate max retention depth that can be drawn down within the drawdown time	D_{max}=	1.06	feet
6	Calculate minimum area required for BMP (sq-ft), A_{min} =	A_{min}=	166176	sq-ft

Worksheet H: Factor of Safety and Design Infiltration Rate and Worksheet

Infiltration Basin

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	3	0.75
		Predominant soil texture	0.25	2	0.5
		Site soil variability	0.25	2	0.5
		Depth to groundwater / impervious layer	0.25	1	0.25
		Suitability Assessment Safety Factor, S_A = ∑p			2
B	Design	Tributary area size	0.25	3	0.75
		Level of pretreatment/ expected sediment loads	0.25	3	0.75
		Redundancy	0.25	3	0.75
		Compaction during construction	0.25	1	0.25
		Design Safety Factor, S_B = ∑p			2.5
Combined Safety Factor, S_{TOT}= S_A x S_B					5.0
Measured Infiltration Rate, inch/hr, K_M (corrected for test-specific bias)					3.00
Design Infiltration Rate, in/hr, K_{DESIGN} = K_M / S_{TOT}					0.60

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.0.

Factor of safety considerations and explanations were provided through table VII.3 and table VII.4 of the OC TGD and as recommended in the GMU Geotechnical report provided in Attachment 1. Factor of safety considerations and descriptions for each basin can be found below:

Infiltration Basin A-1

Factor Description	Factor Value	Description/Explanation
Soil assessment methods	1	Low concern was selected because preliminary testing has been tested and design level testing will eventually be provided in accordance with the TGD testing specifications and as recommended in the GMU Geotechnical report.
Predominant soil texture	1	Low concern was selected because there are granular to slightly loamy soils
Site soil variability	1	Low concern because test pits indicate relatively homogeneous soils
Depth to groundwater / impervious layer	1	Low concern because the groundwater is greater than 10 feet below bottom of facility
Tributary area size	3	High concern because tributary area is greater than 10 acres
Level of pretreatment/ expected sediment loads	2	Medium concern because a forebay will be used for the basin that will mitigate coarse sediments
Redundancy	3	High concern because there is no redundancy
Compaction during construction	1	Low concern because heavy equipment will be actively prohibited from infiltration areas during construction and low probability of unintended/indirect compaction

Infiltration Basin B

Factor Description	Factor Value	Description/Explanation
Soil assessment methods	1	Low concern was selected because preliminary testing has been tested and design level testing will eventually be provided in accordance with the TGD testing specifications and as recommended in the GMU Geotechnical report.
Predominant soil texture	2	Medium concern was selected because there are loamy soils
Site soil variability	1	Low concern because test pits indicate relatively homogeneous soils
Depth to groundwater / impervious layer	1	Low concern because the groundwater is greater than 10 feet below bottom of facility
Tributary area size	3	High concern because tributary area is greater than 10 acres
Level of pretreatment/ expected sediment loads	2	Medium concern because a forebay will be used for the basin that will mitigate coarse sediments
Redundancy	3	High concern because there is no redundancy
Compaction during construction	1	Low concern because heavy equipment will be actively prohibited from infiltration areas during construction and low probability of unintended/indirect compaction

Infiltration Basin C

Factor Description	Factor Value	Description/Explanation
Soil assessment methods	1	Low concern was selected because preliminary testing has been tested and design level testing will eventually be provided in accordance with the TGD testing specifications and as recommended in the GMU Geotechnical report.
Predominant soil texture	2	Medium concern was selected because there are loamy soils
Site soil variability	1	Low concern because test pits indicate relatively homogeneous soils
Depth to groundwater / impervious layer	1	Low concern because the groundwater is greater than 10 feet below bottom of facility
Tributary area size	3	High concern because tributary area is greater than 10 acres
Level of pretreatment/ expected sediment loads	2	Medium concern because a forebay will be used for the basin that will mitigate coarse sediments
Redundancy	3	High concern because there is no redundancy
Compaction during construction	1	Low concern because heavy equipment will be actively prohibited from infiltration areas during construction and low probability of unintended/indirect compaction

Infiltration Basin D1 & D2

Factor Description	Factor Value	Description/Explanation
Soil assessment methods	1	Low concern was selected because preliminary testing has been tested and design level testing will eventually be provided in accordance with the TGD testing specifications and as recommended in the GMU Geotechnical report.
Predominant soil texture	2	Medium concern was selected because there are loamy soils
Site soil variability	1	Low concern because test pits indicate relatively homogeneous soils
Depth to groundwater / impervious layer	1	Low concern because the groundwater is greater than 10 feet below bottom of facility
Tributary area size	3	High concern because tributary area is greater than 10 acres
Level of pretreatment/ expected sediment loads	2	Medium concern because a forebay will be used for the basin that will mitigate coarse sediments
Redundancy	3	High concern because there is no redundancy
Compaction during construction	1	Low concern because heavy equipment will be actively prohibited from infiltration areas during construction and low probability of unintended/indirect compaction

Infiltration Basin E

Factor Description	Factor Value	Description/Explanation
Soil assessment methods	3	High concern was selected because use of soil survey maps was used as well as GMU's Geotechnical recommendations to estimate the soil type
Predominant soil texture	2	Medium concern was selected because there are loamy soils
Site soil variability	2	Medium concern because analysis indicates relatively moderately homogeneous soils
Depth to groundwater / impervious layer	1	Low concern because the groundwater is greater than 10 feet below bottom of facility
Tributary area size	3	High concern because tributary area is greater than 10 acres
Level of pretreatment/ expected sediment loads	3	High concern because expected sediment loads are high with the large area of existing natural tributary area
Redundancy	3	High concern because there is no redundancy
Compaction during construction	1	Low concern because heavy equipment will be actively prohibited from infiltration areas during construction and low probability of unintended/indirect compaction

Infiltration Basin F

Factor Description	Factor Value	Description/Explanation
Soil assessment methods	3	High concern was selected because use of soil survey maps was used as well as GMU's Geotechnical recommendations to estimate the soil type
Predominant soil texture	2	Medium concern was selected because there are loamy soils
Site soil variability	2	Medium concern because analysis indicates relatively moderately homogeneous soils
Depth to groundwater / impervious layer	1	Low concern because the groundwater is greater than 10 feet below bottom of facility
Tributary area size	3	High concern because tributary area is greater than 10 acres
Level of pretreatment/ expected sediment loads	3	High concern because expected sediment loads are high with the large area of existing natural tributary area
Redundancy	3	High concern because there is no redundancy
Compaction during construction	1	Low concern because heavy equipment will be actively prohibited from infiltration areas during construction and low probability of unintended/indirect compaction

Table 12: Biofiltration Basin for D3 and A Street Bridge (D4)

Area Designation	TDA (ac)	DCV (ac-ft)	75% of DCV	K_{media} (in/hr)	Ponding Depth, d_p (ft)	Ponding Drawdown Time, DD_P (hr)	Depth Filtered, $D_{filtered}$ (ft.)	Media Depth, d_m (ft)	Gravel Depth, d_g (ft)	Basin Area (ac)
$D3/D4_{BRIDGE}$	260.6	15.21	11.41	5.0	1.50	3.6	1.25	3.00	2	4.15

Section X HCOC and POC Effectiveness and Consistency Evaluation

The purpose of this section is to address the consistency of the PA 3 WQMP with the Ranch Plan WQMP. Specifically, this section evaluates the effectiveness of the PA 3 WQMP and evaluates the impacts of the proposed development on hydrologic conditions of concern and pollutants of concern.

As previously mentioned, PA 4 will not be evaluated for HCOC because it is exempt by the RMV ROMP hydromodification exemption.

Hydrologic Conditions of Concern

Table 13 summarizes the HCOCs and significance thresholds set forth in the Ranch Plan WQMP.

Table 13: Hydrologic Conditions of Concerns

Hydrologic Conditions of Concern	Significance Threshold
1. Increased Stormwater Runoff Flow Rate, Volume, and Flow Duration	• Substantially alter the existing drainage pattern of the site or area, including alteration of the course of a stream or river, in a manner that would cause substantial erosion or siltation. • Substantially increase the frequencies and duration of channel adjusting flows.
2. Decreased Infiltration and Groundwater Recharge	• Substantially deplete groundwater supplies or interfere substantially with groundwater recharge that would cause a net deficit in aquifer volumes or lowering of the local groundwater table.
3. Water Balance and Changed Base flow	• Substantially increase or decrease base flows as to negatively impact riparian habitat. • Substantially increase or decrease low flow estimates where high groundwater elevations are considered important.

Hydrologic Condition of Concern #1: Increased Stormwater Runoff Flow Rate, Volume, and Flow Duration

Mean annual runoff volumes are expected to increase with development. The increase can be explained by the change in percent imperviousness associated with urbanization. The overall imperviousness within PA 3 in the pre-development condition is approximately 0%, in contrast to a value of 80% for residential land uses of varying density, industries, and commercial developments. Runoff volume is directly proportional to percent imperviousness.

Sub-drainage Area D is the only portion of PA 3 that triggers an HCOC. The proposed BMPs, as shown in Table 11of the previous section, will mitigate for the increase in runoff

in the proposed condition. The proposed basin will attenuate peak flows from the 2-year storm event up to the 10-year storm event. Therefore HCOC number 1 will not be of concern.

Goberdanora Canyon serves as a sediment transport conduit between the major upstream sediment-producing sub-basins and downstream areas. The result is that the channel is made up of coarse substrate, including cobbles, that is mobilized only under large events. With respect to channel stability, the hydromodification and flood control BMPs will mitigate additional runoff volume and increases in peak flow as to not significantly alter the sediment transport capacity of the channel.

San Juan Creek also serves as a sediment transport conduit between the major upstream sediment-producing sub-basins and downstream areas. The result is that the channel is made up of coarse substrate, including cobbles, that is mobilized only under large events. With respect to channel stability, the flood control BMPs will attenuate additional runoff volume and peak flows from the development to avoid significantly altering the sediment transport capacity of the channel. This is in part because the increase in peak flows from the development area will be small compared with peak flows in San Juan Creek, and in part because the peak flows from the development area will be attenuated from the proposed flood control basins.

Hydrologic Condition of Concern #2: Decreased Infiltration and Groundwater Recharge

In spite of the increase in imperviousness, the effect of the development is likely to increase infiltration and groundwater recharge due to the proposed bioretention basin in Sub-drainage Area D, and from landscape irrigation throughout the site. BMPs in the southern Sub-drainage Areas B and C, will also contribute to incidental infiltration. In addition, much of the additional runoff volume will ultimately infiltrate into the wide San Juan channel and will help to sustain the groundwater aquifer for downstream water supply users. Therefore, it is very unlikely that infiltration and groundwater recharge would be reduced.

Hydrologic Condition of Concern #3: Water Balance and Changed Base Flows

The increase in infiltration may lead to increases in base flows in San Juan Creek, which would enhance existing or support additional riparian vegetation. The increase is not anticipated to be of significance due to the increased imperviousness throughout PA 3 and PA 4. The potential benefits of increased base flows obviously depend on a number of factors, including infiltration of base flows in San Juan Creek into the alluvial aquifer. Such processes will affect where base flow increases may occur and of what magnitude. An adaptive management strategy shall be adopted that will take advantage of the additional anticipated water. If increased groundwater infiltration and increased base flows were determined to be beneficial to riparian habitats, no changes would be made to flow

management. If it is determined that increased base flows are causing negative environmental effects, such as facilitating the invasion of exotic plant and wildlife species (e.g., bullfrogs), modifications in the flow management system to control these adverse effects will be evaluated and implemented. Such modifications could include additional utilization of surface runoff for non-domestic water supply to decrease or offset increases in groundwater infiltration. Additionally, base flows will not have an adverse effect on Total Dissolved Solids due to the flood control basins and the forebays leading up to the infiltration basins.

Pollutants of Concern

Significance Thresholds for Pollutants of Concern

The significance thresholds for pollutants of concern are the narrative and numeric surface and groundwater quality objectives and criteria in the Basin Plan and the California Toxics Rule (CTR). The CTR criteria do not apply to stormwater discharges; nonetheless, the criteria do provide a basis for comparison and one means of evaluating the potential effects of discharges of pollutants on aquatic toxicity. The water quality criteria are used as a comparative measure to evaluate potential ecological impacts.

Surface water quality criteria in the CTR are presented as both acute criteria and chronic criteria. Acute criteria represent the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time (one hour) without deleterious effects; chronic criteria equal the highest concentration to which aquatic life can be exposed for an extended period of time (four days) without deleterious effects. Chronic criteria are applicable to base flow conditions.

Table 14: Pollutants of Concern and Significance Thresholds for Surface Water

Pollutants of Concern	Significance Threshold
Sediment: Total Suspended Solids (TSS)	1. Narrative objective in the Basin Plan[1]: "The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses."
Nutrients: Nitrate Nitrogen, Total Kjeldahl Nitrogen, and Total Phosphorus	1. Narrative objective in the Basin Plan: "Concentrations of nitrogen and phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below those which stimulate algae and emergent plant growth." 2. Basin Plan objective: "A desired goal in order to prevent plant nuisances in streams and other flowing waters appears to be 0.1 mg/L total Phosphorus." 3. Basin Plan objective: "Analogous threshold values have not been set for nitrogen compounds; however, natural ratios of nitrogen to phosphorus are to be determined by surveillance and monitoring and upheld."
Trace metals: Aluminum, Cadmium,	1. Narrative objective in the Basin Plan: Toxic substances shall not be discharged to levels that will adversely affect beneficial uses. 2. The CTR[2] criteria for Cd, Cu, Pb, and Zn are the applicable water quality objectives

Cadmium, Copper, Lead, and Zinc	2. The CTR[2] criteria for Cd, Cu, Pb, and Zn are the applicable water quality objectives for protection of aquatic life. The CTR criteria are expressed for acute and chronic (4-day average) conditions; however, only acute conditions are applicable for stormwater discharges because the duration of stormwater discharge is typically less than 4 days. 3. CTR criteria for Cd, Cu, Pb, and Zn are expressed for dissolved metal concentrations and are determined based on hardness in the receiving water. In application of criteria in this Project, local hardness data will be used to determine most appropriate criteria. 4. EPA's national recommended acute water quality criterion (NAWQC)[3] for total aluminum is 750 µg/L within the pH range of 6.5 to 9.0.
Indicator Bacteria	1. Basin Plan objectives are based on the designated uses of the water body. The most restrictive designation for the Project's receiving waters is Primary Contact Recreation. The Basin Plan water quality objective for this use designation is, for not less than 5 samples for any 30-day period, fecal coliform shall not exceed a log mean of 200 MPN/100 mL, nor shall more than 10% of total samples during any 30-day period exceed 400 MPN/100mL. 2. The TMDL for Indicator Bacteria Project 1 – Beaches and Creeks in the San Diego Region includes interim and final numeric targets for San Juan Creek as follows: Wet Weather Numeric Target Interim Target[4] / Final Target Fecal Coliform: 400 MPN/100 mL / 400 MPN/100 mL Enterococci: 61 MPN/100mL / 61 MPN/100mL Dry Weather Numeric Target Interim Target / Final Target Fecal Coliform: 200 MPN/100 mL / 200 MPN/100 mL Enterococci: 33 MPN/100mL / 33 MPN/100mL 3. The TMDL for Indicator Bacteria Project 1 – Beaches and Creeks in the San Diego Region includes fecal coliform, total coliform, and enterococci WLA for municipal MS4 wet weather and dry weather discharges. The TMDLs are expressed as total bacteria loads per year from all MS4 discharges to San Juan Creek.
Petroleum Hydrocarbons: Oil & Grease and Polycyclic Aromatic Hydrocarbons (PAHs)	1. CTR objectives are available for some organic compounds. 2. PAHs are a class of compounds. CTR values for individual PAHs are available for protection of human health only. No regulatory standards exist for the protection of aquatic health. 3. Narrative objective in the Basin Plan for oil & grease: "Waters shall not contain oils, greases, waxes, or other materials in concentrations which result in a visible film or coating on the surface of the water, or which cause nuisances or which otherwise adversely affect beneficial uses."
Pesticides	1. Narrative objective in the Basin Plan: Toxic substances shall not be discharged to levels that will adversely affect beneficial uses. 2. CTR lists numeric objectives for some, but not all pesticides. No CTR criteria exist for diazinon and chlorpyrifos.
Trash and Debris	1. Basin Plan narrative floatables objective: "Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations which cause nuisance or adversely affect beneficial uses."

[1] Water Quality Control Plan for the San Diego Basin (San Diego Basin Plan) (SDRWQCB, 1994).

[2] U.S. Environmental Protection Agency, Federal Register, Volume 65, No. 97 (Thursday, 18 May 2000), pp. 31682-31719; and Federal Register, Volume 66, No. 30 (Tuesday 13 February 2001), pp. 9960-9962 (California Toxics Rule and Correction).

[3] U.S. Environmental Protection Agency, Office of Water, National Recommended Water Quality Criteria 2002, EPA 822-R-02-047 (November 2002).

[4] Allowable exceedance frequency of 22 percent for interim target (SDRWQCB, 2005).

Water Quality Modeling – Wet Weather Flows

Water quality modeling was conducted to compare pre- vs. post-development loads and concentrations for some of the pollutants of concern. The model assesses stormwater quality impacts associated with the proposed project using an empirical, volume-based, pollutant loads modeling approach. The methodology is adapted from the empirical method referred to as the Simple Method (Schueler, 1987). The adapted Simple Method model was developed in spreadsheet format and uses

- available stormwater rainfall data;
- a rational method approach to convert rainfall to runoff;
- measured data that relates water quality to the proposed type of land use; and
- BMP effluent quality data representing treatment in water quality basins that are sized to have a brim-full drain time of 48 hours.

Results from the model include estimates of changes in mean annual runoff volumes, pollutant loads, and pollutant concentrations that may occur because of the development. The model does not incorporate the hydraulics of the site (e.g., flow routing), which would be more appropriate for design stages.

The ideal form of the data is event mean concentrations, which are flow composite samples. Stormwater quality data is quite variable and the preferred sources of data are those where sufficient storm events have been sampled, deeming statistical measures reliable. Sources of land use runoff water quality data included that collected by Wildermuth Environmental within the Ranch Plan area (Geosyntec Consultants, 2004), data collected by Los Angeles County (Los Angeles County, 2000), and data collected by Ventura County (VCFCD, 1997 – 2001).

Orange County also conducts an extensive Regional Monitoring Program; however, the focus is on monitoring in streams to help evaluate TMDL compliance, rather than monitor in storm drain systems where the tributary areas are dominated by a single land use. These data have been used in helping to establish the environmental setting, but are not suitable as input for modeling land use runoff quality.

In addition to predicting runoff water quality, the effectiveness of proposed treatment facilities was predicted. BMP effectiveness data were obtained in the form of effluent water quality for various BMP types as contained in the ASCE/EPA International BMP Database (Strecker et al. 2001). Relative performance information provided in the Orange County BMP Fact Sheets were also reviewed for consistency. The pollutant load associated

with each storm was estimated as the product of the storm event runoff times the event mean concentration. For each year in the simulation, the individual storm event loads are summed to estimate the annual load. The mean annual load is then the average of all the annual loads.

The preferred form of data used to address water quality are flow composite storm event samples, which are measures of the average water quality during the event. To obtain such data usually requires automatic samplers that collect data at a frequency that is proportionate to flow rate. The pollutants with sufficient flow composite sampling data are total suspended solids, nutrients (nitrate-nitrogen, TKN, and total phosphorus, and metals (aluminum, copper, lead, and zinc).

The other pollutants of concern – cadmium, pathogens, pesticides, hydrocarbons, and trash and debris, are not amenable to this type of sampling either because of short holding times (e.g., pathogens), difficulties in obtaining a representative sample (e.g., hydrocarbons), low detection levels (e.g., pesticides), or cost. These pollutants were addressed qualitatively using literature information and best professional judgment due to the lack of statistically reliable monitoring data for these pollutants. Site-specific monitoring data within the Ranch Plan area were also used to qualitatively address certain pollutants, especially pesticides.

Dry Weather Flows

The wet weather water quality analysis focuses on the changes in water quality during storm events. However, water quality effects during dry weather conditions also are important, especially given that much of the dry weather flows in this region are of anthropogenic origin.

Dry weather flows are typically low in sediment because the flow rates are relatively low and coarse suspended sediment tends to settle out or are filtered out by vegetation. Consequently, pollutants that tend to be associated with suspended solids (e.g., phosphorus, some trace metals, and some pesticides) are typically found in very low concentrations in dry weather flows. The focus of the dry weather analysis is therefore on constituents that tend to be dissolved, e.g., nitrate, or constituents that are as small as to be effectively transported, e.g., bacteria and some organophosphate pesticides.

Local dry-weather monitoring was performed in 2001-2003 at four RMV stations. Amongst the four monitoring stations, SW-6 is representative of dry-weather conditions downstream of developed residential areas as the station monitors in Gobernadora Canyon downstream of the developed Coto de Caza. Dry-weather monitoring at SW-6 has shown that dry-weather concentrations of TSS, trace metals, and nutrients were not detected. Only fecal coliform was detected at the SW-6 station with a concentration of 300 MPN/100mL.

Similarly, SW-7 is representative of the natural dry weather conditions. Dry-weather monitoring at SW-7 has shown that dry weather concentrations of TSS, trace metals, and nutrients were not detected, except for nitrate-nitrogen (0.37mg/L). Fecal coliform was detected at the SW-7 station with a concentration of 70 MPN/100mL.

Dry-weather flow monitoring at Heritage Fields in Orange County has shown that the intensity dry-weather nuisance flow increases with urbanization at a rate of 0.0001512 cfs per of developed area. PA 3 and PA 4 includes the development of 2325 acres, which would produce a total nuisance flow of 0.352 cfs.

The analysis conducted for dry weather flows was further simplified because most post-development dry weather flows will be infiltrated in the vegetated treatment control BMPs or stored and reused for irrigation in the retention basins. The size of treatment BMPs is sufficient to accommodate all nuisance flows. As such, the following analysis for modeled pollutants of concern addresses wet-weather flows only.

Analysis for Modeled Pollutants of Concern

A water quality model was developed to assess the potential impacts of the PA 3 and PA 4 development on the receiving water quality, and to evaluate the effectiveness of the proposed stormwater treatment systems. Three different conditions were evaluated with the water quality model:

- Pre-Development
- Post-Development without treatment
- Post-Development with treatment

The water quality model is an empirical model that applies monitored water quality data to modeled stormwater runoff flows. The model was developed to provide a simple yet reasonably reliable method for predicting pollutant loads and concentrations that occur because of development. Average annual loads and concentrations are calculated and presented for the dry, wet and total period of record. The model also predicts the improvement in water quality due to the implementation of BMPs. The objectives of the water quality model are as follows:

- Compare predicted loads and concentrations for pre-development, post-development, and post-development with BMP conditions.

- Estimate the percent change in pollutant loads and concentrations by comparing predevelopment condition to post-development conditions with BMPs.

- Compare concentrations of pollutants in post-development condition with BMPs with the appropriate water quality criteria, and/or water quality design standards.

The water quality model was used to evaluate concentrations and loads for the pollutants of concern that are identified in this WQMP. Pollutants of concern that are considered in the model are:

- Pathogens (Bacteria and Viruses)
- Toxicity
- Sediment (Total Suspended Solids)
- Nutrients
- Heavy Metals (Aluminum, Cadmium, Copper, Lead, and Zinc)
- Hydrocarbons (Oil and Grease, Polycyclic Aromatic Hydrocarbons)
- Pesticides
- Trash and Debris
- Chlorine
- Organic Compounds (Includes pesticides, petroleum hydrocarbons, and vegetative debris)
- Oxygen-Demanding Compounds (Includes trash and debris from biodegradable food and vegetation waste)
- Chemical oxygen-demanding compounds (Includes ammonia and is included in the nutrient category)

Due to insufficient information regarding Pesticides, Hydrocarbons, and Chlorine, the water quality model will not evaluate the effects of water quality that development will likely induce or reduce on these pollutants.

These pollutants are commonly associated with runoff from urban areas. The pollutant event mean concentrations (EMCs) used in the model were adapted from both the Los Angeles County Structural BMP Prioritization and Analysis Tool (SBPAT) (Geosyntec Consultants, 2008) and the 2006 Los Angeles Department of Public Works Structural BMP Prioritization Report (LACDPW, 2006).

Water Quality Model Methodology

In general, pollutant loads are calculated by first estimating average annual runoff volumes for each land use within a given catchment. Runoff volumes from each land use are then multiplied by their corresponding pollutant EMCs to estimate the pollutant loads. The load reduction achieved by a specific BMP was determined based on a BMP effectiveness factor that is specific for each pollutant. The EMCs, BMP effluent data, and BMP effectiveness factors used in the water quality model are summarized within this section. The following sub-sections describe the methodologies and equations used in the water quality model.

Pollutant Loads and Concentrations

The pollutant-loading model integrates the runoff volume, the land use characterization, the EMCs, and the removal efficiencies of structural BMPs as inputs. The model computes

the expected concentration in stormwater runoff, as well as the annual pollutant loads calculated for an average annual runoff volume.

Resulting Concentration in Stormwater Runoff

The methodology applied in the pollutant-loading model to determine the expected concentration in stormwater runoff is similar to Method 2 defined in the 2006 Los Angeles Department of Public Works Structural BMP Prioritization Report (LACDPW, 2006). For each pollutant of concern, the method computes the area-weighted EMC and is adequate for planning level studies (LACDPW, 2006). The method assumes the same level of imperviousness, rainfall intensity, and hydrologic losses in each land use category within the same tributary drainage area. The area-weighted EMC is calculated using the following equation:

$$C_i^k = \sum_{j=1}^{6} \frac{A_{i,j}}{A_i} \cdot C_{i,j}^k$$

Where:

C_i^k = Area-weighted EMC of pollutant k in runoff from drainage area i

$C_{i,j}^k$ = EMC of pollutant k from land use j of drainage area i

$A_{i,j}$ = Drainage area from land use j of drainage area i

A_i = Total drainage area i

The method computes the area-weighted EMC directly using the ratios of land use distribution developed as explained in the land use characterization section. This direct computation is equivalent to using the ratio of the drainage area of a single land use category to the total drainage area to the evaluated BMP site. Table 15 provides the results for the average event mean concentrations.

Table 15: Average Event Mean Concentrations

Pollutant	Pathogens	Sediment	Nutrients			Trash/ Debris	Trace Metals		
Constituents	**Fecal Coliform**	**TSS**	**NH4**	**NO3**	**TP**	**Trash**	**Total Zinc**	**Total Cu**	**Total Pb**
Land Use/Units	MPN/100ml	mg/L	mg/L	mg/L	mg/L	cf/ac	ug/L	ug/L	ug/L
Vacant/Open Space	3.32E+03	216.60	0.11	1.17	0.12	0.00	26.30	10.60	3.00
Single Family Residential	2.79E+04	124.20	0.49	0.78	0.40	1.00	71.90	18.70	11.30

Average Annual Pollutant Loads

Pollutant loads for each land use were estimated by multiplying the average annual runoff volumes by the corresponding land use EMCs. The pollutant-loading model uses both the area-weighted EMC and the average annual runoff volume from the 50-year time frame to compute the expected pollutant-loadings from the drainage area tributary to each identified BMP site. The method assumes an equal level of imperviousness, rainfall intensity, and hydrologic losses in each land use category within a same tributary drainage area. The pollutant-loadings are computed using the following equation:

$$L_{i,k} = CF_k \cdot C_{i,k} \cdot V_i$$

Where:

CF_k = conversion factor specific to pollutant k

$L_{i,k}$ = load of pollutant k in drainage area i

$C_{i,k}$ = area-weighted EMC of pollutant k in runoff from drainage area i

V_i = average annual runoff volume from drainage area i (50 year time frame)

This equation applies to all pollutants of concern, except for trash. Monitoring studies performed in the City of Los Angeles have determined that one cubic feet of trash is generated each year per acre of urbanized land. The annual loads for trash were determined based on the acreage of land that will be urbanized within PA 3 and PA 4, provided in Table 16.

Table 16: Average Annual Pollutant Loads

Pollutant	Pathogens	Sediment	Nutrients			Trash/ Debris	Trace Metals		
Constituents	**Fecal Coliform**	**TSS**	**NH4**	**NO3**	**TP**	**Trash**	**Total Zinc**	**Total Cu**	**Total Pb**
Land Use/Units	MPN/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	cf/yr	lbs/yr	lbs/yr	lbs/yr
Vacant/Open Space	1.21E+13	173,391.7	88.1	936.6	96.1	0.0	21.1	8.5	2.4
Single Family Residential	2.47E+14	242,778.3	957.8	1,524.7	781.9	813.0	140.6	36.55	22.1

Annual Pollutant Load Reduction

For each pollutant of concern, the pollutant-loading model computes the expected annual pollutant load reduction at each potential BMP site using the removal efficiency of the proposed BMP. The pollutant-loading model also integrates inputs such as the pollutant loading, the annual runoff volume from the tributary drainage areas of PA 3 and PA 4, and

the volume diverted for treatment to the potential BMP for the computation. The pollutant load reductions are estimated using removal efficiencies expressed in percentages and do not consider the potential fluctuations in efficiencies which may occur in the level of influent concentrations and other impacting parameters such as climate and biodiversity impacts. The pollutant-loading model does not have the capability to integrate all of these variables; however, it provides an adequate estimate for planning level studies. The pollutant load reductions are calculated using the following equation:

$$LR_{i,k} = RE_k^n \cdot L_{i,k} \cdot \frac{V_{Treated,\ i}}{V_{WASE,\ i}}$$

Where:

$LR_{i,k}$ = load reduction of pollutant k at site i

REnk = removal efficiency of pollutant k by BMP type n

$L_{i,k}$ = load of pollutant k in WASE-based volume at site i

$V_{Treated,\ i}$ = annual runoff volume treated at site i

$V_{annual,\ i}$ = annual runoff volume draining to site i

For planning purposes, it is assumed that the annual runoff volume to be treated by BMPs corresponds to the cumulative annual runoff volume associated with 85th percentile or more frequent storm events. Expected annual pollutant load reductions are summarized in Table 17. Three types of BMPs that are consistent with the intent of LID and hydromodification requirements of the NPDES Permit are considered in the calculations: infiltration basins or bioretention basins, biofiltration systems, and extended detention basins. Pollutant load reductions are expressed in pounds (lbs) for sediment, nutrients, and trace metals, MPN of organisms for fecal coliform, and in cubic feet (cf) for trash, respectively.

Table 17: Annual Pollutant Load Reduction

Pollutant	Pathogens	Sediment	Nutrients			Trash/ Debris	Trace Metals		
Constituents	**Fecal Coliform**	**TSS**	**NH4**	**NO3**	**TP**	**Trash**	**Total Zinc**	**Total Cu**	**Total Pb**
BMP/Units	MPN/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	cf/yr	lbs/yr	lbs/yr	lbs/yr
Bioretention	2.47E+14	242,778.3	957.8	1,524.7	781.9	813.0	140.5	36.6	22.1
Extended Detention Basin	1.73E+14	208,109.3	381.2	606.8	204.9	813.0	131.8	28.7	20.1

Potential extended detention basin sites may be expected to show no or limited pollutant reduction for indicator bacteria. Removal mechanisms of pollutants in extended detention basins are primarily settling and flocculation. Limited literature data is available for extended detention basins. Monitoring data from four Caltrans extended detention basins in southern California did not show reduction in indicator bacteria. Two factors may explain this status quo: measurement errors were introduced as the available data consists of grab samples rather than storm event EMCs; and indicator bacteria present in the basin prior to the storm event may have been remobilized (Caltrans, 2004).

Expected pollutant loads from PA 3 and PA 4 after water quality mitigation were evaluated for two scenarios: a first scenario that considers bioretention and infiltration to meet the requirements of the Permit; a second scenario that includes a treatment train made of a biofiltration in the upper planning areas and an extended detention basin downstream to mimic the water quality benefits of a hydromodification basin. Expected pollutant loads are listed for each scenario in Table 18.

Table 18: Annual Pollutant Load

Pollutant	Pathogens	Sediment	Nutrients			Trash/ Debris	Trace Metals		
Constituents	**Fecal Coliform**	**TSS**	**NH4**	**NO3**	**TP**	**Trash**	**Total Zinc**	**Total Cu**	**Total Pb**
BMP/Units	MPN/yr	lbs/yr	lbs/yr	lbs/yr	lbs/yr	cf/yr	lbs/yr	lbs/yr	lbs/yr
Infiltration/Bio retention	0.00E+00	-	-	-	-	-	-	-	-
Biofiltration and EDB	7.42E+13	34,668.7	576.6	917.9	477.0	-	8.7	7.8	2.0

Model Input Parameters

As previously stated, the accuracy of the water quality model is heavily dependent on how well the input parameters, such as the hydrology, water quality, and BMP effectiveness

data, describe the actual site characteristics. Because of this, local data was used whenever possible. The primary input data required by the model include:

- Pre- and post-development land uses areas
- Pollutant EMC data for each land use
- Average annual runoff volumes for each land use
- BMP effluent quality

The following sections describe the source for each of the input parameters.

Pre and Post Development Land Uses

Land use data was obtained for the existing and proposed conditions for each of the modeled alternatives. Each land use type was assigned a pollutant concentration (based on monitoring data) to determine the pollutant loads generated from each land use.

The pre-development condition is defined as the naturally occurring condition of the project area as specified in the South Orange County MS4 Permit. The post-development condition is defined as developed land and includes all of the land uses discussed in the previous sections of this document. These conditions were applied to gather information pertaining to the EMC for each pollutant and constituent of concern for water quality model analysis.

Event Mean Concentrations

The EMCs, or mean concentrations of pollutants in the runoff from a storm event, are inputs to the pollutant-loading model. For all pollutants of concern other than fecal coliform from ranch lands, the EMCs used in the model were obtained from the 2006 Los Angeles Department of Public Works Structural BMP Prioritization Report (LACDPW, 2006). The methodology used to develop the EMCs for each pollutant of concern is explained in the Structural BMP Prioritization Report (LACDPW, 2006):

- EMCs for nutrients, zinc, copper, lead, and TSS were developed based on statistical analysis of two sets of monitoring data: the Los Angeles County 1994-2000 flow-weighted composite sampled land use runoff monitoring data and the Ventura County 1994-2004 agriculture EMC data.

- EMCs for trash were based on median values from City of Los Angeles catch basin monitoring data.

- EMCs for fecal coliform were estimated as geometric means from LAC grab and composite-sampled land use runoff monitoring data.

Table 19 reports all the EMC input to the pollutant loading model. The EMCs are expressed in milligrams per liter (mg/L) for sediment and nutrients and micrograms per liter (µg/L) for trace metals. Fecal coliform concentrations are expressed as the MPN of organisms per 100 milliliters of water (MPN/100 mL). Trash concentrations are expressed in cubic feet per acre (cf/ac).

Table 19: Event Mean Concentration

Pollutant	Pathogens	Sediment	Nutrients			Trash/ Debris	Trace Metals		
Constituents	Fecal Coliform	TSS	NH4	NO3	TP	Trash	Total Zinc	Total Cu	Total Pb
Land Use/Units	MPN/100ml	mg/L	mg/L	mg/L	mg/L	cf/ac	µg/L	µg/L	µg/L
Vacant/Open Space	3.32E+03	216.60	0.11	1.17	0.12	0.00	26.30	10.60	3.00
Single Family Residential	2.79E+04	124.20	0.49	0.78	0.40	1.00	71.90	18.70	11.30

Average Annual Runoff Volume

The arithmetic average of annual runoff volumes was determined based on Clear Creek Solution, Inc.'s SOCHM runoff outputs. SOCHM was alternatively used for sizing hydromodification control basins and outputs runoff information on a 15-minute time step runoff.

In addition, the annual water quality volume, which accounts for the cumulative runoff volume associated with 85th percentile or more frequent rainfall events, was determined based on SOCHM's outputs and the identification of all water quality events in the 50-year timeframe of available rainfall information.

Structural BMP – Removal Efficiencies

The pollutant-loading model estimates the expected pollutant load reductions for each type of BMP, thus requires expected removal efficiencies for each BMP. The approach remains basic but provides a fair representation of the removal performance of implemented BMPs at a planning level.

Hunt et al. evaluated the benefits of implementing certain types of media in field-based bioretention devices located in North Carolina (Hunt et al. 2008). Removal efficiencies associated with bioretention devices were incorporated from this study.

The National Pollutant Removal Database summarizes monitoring data from 40 different studies on constructed wetlands (Center for Watershed Protection, 2007). The database also reports the median removal efficiencies from a statistical analysis of the collected

monitoring data. Removal efficiencies associated with constructed wetlands were obtained from this database.

Removal efficiencies associated with the other types of structural BMPs considered in this study were obtained from the Caltrans BMP Retrofit Pilot Program (Caltrans, 2004). The retrofit pilot program establishes the performance and costs associated with installation and operation of structural BMPs for treating stormwater runoff from existing Caltrans facilities. Extended detention basins are proposed at several locations. They are a widely used and acceptable conventional BMP that targets multiple pollutants. However, the study did not develop load reduction estimates for bacteria since only grab samples were collected for indicator bacteria. Table 20 summarizes the removal efficiencies used in the Pollutant-Loading Model.

Table 20: Removal Efficiencies Used in the Pollutant-Loading Model

Pollutant	Pathogens	Sediment	Nutrients			Trash/ Debris	Trace Metals		
BMP/Constituents	**Fecal Coliform**	**TSS**	**NH4**	**NO3**	**TP**	**Trash**	**Total Zinc**	**Total Cu**	**Total Pb**
Infiltration Basin	100%	100%	100%	100%	100%	100%	100%	100%	100%
Extended Detention Basin	0%	72%	14%	14%	39%	100%	73%	58%	72%
Biofiltration*	70%	49%	30%	30%	-	100%	77%	63%	68%

* It is possible that removal efficiencies of metals and TSS for bioretention systems could be higher

Pollutants Addressed Without Modeling, Groundwater Impacts, and Construction Phase Impacts

Selected Pollutants of Concern

The assessment of bacteria, sediment, nutrients, trace metals, and trash was conducted with the aid of a water quality model. Necessary inputs to the model include statistically reliable and representative measured data that characterizes runoff water quality from a variety of land use types, and characterizes the effectiveness of BMPs. Such data are not available for the entire suite of pollutants of concern. Consequently the other pollutants of concern, including cadmium, pesticides, and hydrocarbons were analyzed qualitatively. The reasons that such data do not exist for each of these pollutants are discussed below.

- Various forms of hydrocarbons are common constituents associated with urban runoff; however, these constituents are difficult to measure because of laboratory interference effects, sample collection challenges (hydrocarbons tend to coat sample bottles), and they are typically measured with single grab samples, making

it difficult to develop reliable Event Mean Concentrations (EMCs) based on collecting and analyzing flow composite samples.

- Pesticides in urban runoff are often at concentrations that are below detection limits for most commercial laboratories, limiting the availability of statistically reliable data on pesticides in urban runoff.

Additional language regarding several constituents of concern is provided thereafter, including pathogens, and trash and debris.

Cadmium

Cadmium was not modeled because there was insufficient monitoring data above detectable levels for residential land uses. Only commercial and transportation land uses had sufficient detectable levels of total cadmium (21% and 41% detects respectively, LADPW 2000) to develop EMCs, while dissolved cadmium was consistently below detectable levels for all monitored land uses.

Since there is no basis to expect that cadmium will occur in the runoff from PA 3 and PA 4 at higher concentrations than in runoff from the corresponding land use-based monitoring stations in Los Angeles County, there is no reason to expect that cadmium will occur in stormwater runoff from PA 3 and PA 4 at detectable levels. The laboratory detection limits for cadmium (1 µg/L) is well below the CTR criterion of 5.2 µg/l, which corresponds to a hardness of 120 mg/L, the minimum value observed at four San Juan watershed stations. Therefore, cadmium in runoff from PA 3 and PA 4 is not expected to adversely affect beneficial uses in San Juan Creek.

Pathogen Indicator Bacteria

Pathogens are viruses, bacteria, and protozoa that can cause illness in humans. Identifying pathogens in water is difficult as the number of pathogens is exceedingly small requiring sampling and filtering large volumes of water. Traditionally water managers have relied on measuring "pathogen indicators", such as total and fecal coliform, as an indirect measure of the presence of pathogens. Although such indicators were considered reliable for sewage samples, indicator organisms are not necessarily reliable indicators of viable pathogenic viruses, bacteria, or protozoa in stormwater because coliform bacteria, in addition to being found in the digestive systems of warm-blooded animals, are also found in plants and soil. Certain pathogen indicators can multiply in the field if the substrate, temperature, moisture, and nutrient conditions are suitable.

Sources of pathogen indicators are numerous and include birds, other wildlife, domesticated animals and pets, soils, and plant matter. Anthropogenic sources, which are the focus of the source control and treatment control BMPs, may include poorly functioning septic systems, cross-connections between sewer and storm drains, and the utilization of outdoor areas for human waste disposal by people without access to indoor sanitary facilities.

USEPA has compiled an extensive database on stormwater data collected as part of its program to regulate stormwater (Pitt, et al, 2003). These data were drawn from 65 programs in 17 states throughout the United States. The data indicate that median fecal concentrations range from about 4,300 to 7,700 MPN/100 mL for a range of commercial and residential land uses, compared to a median value of around 3,000 MPN/100 mL for open space and vacant land. These data represent urban areas that in general do not have source and treatment controls, and therefore are not indicative of runoff from the proposed development.

Runoff from agricultural watersheds involving horticulture and row cropping is known to also contain relatively high levels of indicator bacteria. Data from a stormwater drain serving an agricultural watershed with predominantly row crops in Ventura County showed median fecal coliform levels of about 7,000 MPN/100 mL, comparable to that found for general urban runoff (Ventura County, 2005). Agricultural land and open space areas likely share some of same wildlife sources, but farm animals may be present as well. These data indicate that wildlife, farm animals, plants and/or soils can be a very important source of pathogens and/or pathogen indicators such as fecal coliform. PA 3 and PA 4, which would result in converting agricultural land to urban land uses, may not necessarily result in increases in the pathogen concentrations in stormwater discharges.

The primary sources of fecal coliform from the developed portion of PA 3 and PA 4 would likely be sediment, pet wastes, wildlife, and regrowth in the storm drain itself. Other sources of pathogens and pathogen indicators, such as cross connections between sanitary and storm sewers, are unlikely given modern sanitary sewer installation methods and inspection and maintenance practices.

The levels of bacteria in runoff from PA 3 and PA 4 will be reduced by the use of source controls and treatment controls.

The most effective means of controlling pet wastes and wastes from human interaction with wildlife is through source control, specifically education of pet owners, education regarding feeding of waterfowl near waterbodies, providing products and disposal containers that encourage and facilitate cleaning up after pets, and storm drain cleaning practices. These BMPs are described in Section IV of this Master Area WQMP.

Although limited data exists on the effectiveness of dry extended detention basins to treat pathogen indicators, the treatment processes known to be occurring in extended detention basins involve sunlight (ultraviolet light) degradation, sedimentation, and infiltration, all of which can reduce pathogen concentrations and loads. Many of the proposed detention basins are to be located on relatively infiltrative soils and pathogen removal by filtration is a common and effective practice in wastewater treatment. The Center for Watershed Protection maintains a National Pollutant Removal Performance Database that indicates that removal performance for various types of extended detention basins ranges between 70 to 80 percent (CWP, 2000).

In addition to treatment by extended detention, bioretention areas and vegetated swales are proposed. Bioretention relies on filtration through the soil column for water quality treatment, while vegetated swales provide sediment removal through settling and allow for infiltration of low flows. Again, filtration is one of the more effective means of treating pathogen indicators.

The retention lake and retention basin will effectively capture and retain the volume of the water quality design storm (at a minimum), and therefore these water quality features will eliminate the discharge of bacteria indicators in dry weather and low storm flows from their tributary catchments.

As discussed in Section 3, draft TMDLs have been developed for wet weather and dry weather MS4 discharges to San Juan Creek (Table 3 and Table 4 in Section III). Allocations for each TMDL are expressed as annual "loads" in terms of bacteria colonies per year (billion MPN/year) and are divided between point and nonpoint sources based on land use. Responsible parties for point source discharges include the California Department of Transportation (Caltrans), and owners and operators of Phase I and Phase II MS4 systems within the in San Juan Creek watershed. Persons responsible for controllable nonpoint discharges include owners and operators of agricultural and livestock operations in watersheds where bacteria loads from these land uses are more than 5 percent of the total load, including the San Juan Creek watershed. Non-controllable nonpoint source loads come from mostly natural sources (e.g. bird and wildlife feces).

The draft TMDL implementation plan calls for a BMP program of expanded or better-tailored BMPs, at a minimum, for stormwater discharges from Phase I MS4s. Annual progress reports on BMP planning, implementation, and effectiveness in attaining the water quality objectives in impaired beaches and creeks, and annual water quality monitoring reports are required. The first progress report shall consist of a Bacteria Load Reduction Plan specific to each water body. The Bacteria Load Reduction Plan must include the following components:

- Description of existing BMPs in each affected watershed;
- Discussion of effectiveness of existing BMPs and method(s) of evaluation;
- Description of additional BMPs that will be used to meet the required load reductions and compliance schedule;
- Description of locations where BMPs would be located;
- Discussion of why these locations are appropriate; and
- Effectiveness measures.

Subsequent reports should describe the effectiveness of implementing the Bacteria Load Reduction Plan. Methods used for assessing effectiveness should include surveys, pollutant loading estimations, and receiving water quality monitoring. The long-term strategy should also discuss the role of monitoring data in substantiating or refining the assessment. The Bacteria Load Reduction Plans may be re-evaluated at set intervals, such as 5-year renewal cycles for NPDES permits). Plans may be iterative and adaptive according to assessment and any special studies.

The draft TMDL implementation plan also calls for coordination and execution of special studies by the SDRWQCB and others in recognition of the fact that potential problems are associated with using bacteriological WQOs to indicate the presence of human pathogens in receiving waters free of sewage discharges. Initiating special studies to understand the uncertainties between bacteria levels and bacteria sources within the watersheds may be helpful to answer the following questions:

- What is the risk of illness from swimming in water contaminated with urban/stormwater runoff devoid of sewage?

- Do exceedances of the bacteria water quality objectives from animal sources (wildlife and domestic) increase the risk of illness?

- Are there other, more appropriate surrogates for measuring the risk the indicator bacteria WQOs currently used?

Addressing these uncertainties is needed to maximize effectiveness of strategies to reduce the risk of illness, which is currently measured by indicator bacteria densities. Ultimately, TMDLs will be recalculated if WQOs are modified due to results of special studies conducted in the future.

In summary, the Planning Area 3 and 4 Master Plan WQMP, consistent with the MS4 Permit and DAMP/LIP requirements, includes a comprehensive set of source and treatment control BMPs selected to manage pathogen indicators. As noted previously, the SDRWQCB has not yet adopted the Basin Plan amendment, which includes the draft TMDL, however, this WQMP as noted above includes a comprehensive set of pathogen source and treatment control BMPs. Through implementation of these BMPs, pathogen impacts will be reduced to the "maximum extent practicable." In addition, as discussed in Section V above, an adaptive management approach will be used to evaluate whether the WQMP elements are functioning as intended and to implement corrective procedures when needed.

Petroleum Hydrocarbons

The sources of oil, grease, and other petroleum hydrocarbons in urban areas include spillage and seepage of fossil fuels, discharge of domestic and industrial wastes, atmospheric deposition, and runoff (USEPA, 2002a). Runoff can be contaminated by

leachate from asphalt roads, wearing of tires, deposition from automobile exhaust, and improper disposal of used oil and other automotive-related fluids. Petroleum hydrocarbons, such as polycyclic aromatic hydrocarbons (PAHs), can accumulate in aquatic organisms from contaminated water, sediments, and food and are known to be toxic to aquatic life at low concentrations (USEPA, 2000a). Hydrocarbons can persist in sediments for long periods and result in adverse impacts on the diversity and abundance of benthic communities. Hydrocarbons can be measured as total petroleum hydrocarbons (TPH), oil and grease, or as individual groups of hydrocarbons, such as PAHs.

PAHs represent over 100 different chemicals and are found in coal tar, crude oil, creosote, and roofing tar; 16 PAHs have been placed on EPA's list of priority pollutants. Some PAHs are formed during the combustion of petroleum-based, wood, and paper products. The most likely sources of PAHs in stormwater runoff are vehicle combustion and leaks that could contribute PAHs in runoff from highways and parking lots. The majority of PAHs in stormwater adsorb to the organic carbon fraction of particulates in the runoff, including soot carbon generated from vehicle exhaust (Ribes et al. 2003). For example, a stormwater runoff study by Sharma et. al. (1997) found that the dissolved phase PAHs represented less than 11 percent of the total concentrations.

The median concentration of oil and grease summarized from a representative sample of NPDES MS4 monitoring programs nationwide was 3.1 mg/L for residential land use (Pitt et. al., 2003). The mean oil and grease value for three samples from high density single family residential land use reported in the Los Angeles County database was 1.3 mg/L; while TPH was also 1.3 mg/L in three samples (LA County, 2000). The reported mean oil and grease and TPH in four transportation land use samples was 3.1 mg/L. Oil and grease and TPH were not detected in 17 and 19 samples, respectively, out of a total of 21 samples taken of runoff from open space. These data indicate that hydrocarbons are only intermittently observed in runoff from residential areas, and when observed, the levels are relatively low. Dry weather discharges are primarily associated with illegal dumping, especially in areas where automobiles are maintained by homeowners that do not have a means of recycling used oil.

The Orange County DAMP/LIP rates detention basins and biofilters with a high or medium removal efficiency for oil and grease, and states that the effectiveness of infiltration basins and wetlands is unknown. However, the California BMP Handbook attributes infiltration basins and constructed wetlands with high removal effectiveness for oil and grease, and medium effectiveness for extended detention basins and vegetated swales (CASQA, 2003). The proposed treatment control BMPs, which are designed to treat pollutants through settling, adsorption, and biologically mediated processes in extended detention basins, wetlands, filtration, and vegetated swales, should be very effective at treating PAHs and other petroleum hydrocarbons at the expected concentrations in runoff.

Pesticides

Pesticides can be of concern from past as well as future activities. Where past farming practices involved the application of persistent pesticides such as DDT, there is the potential for mobilization during construction. Post-development application of pesticides for lawn, garden, and household use and common area landscaping may also introduce pesticides into the aquatic environment.

Wetlands Research Associates (WRA, 2002) identified pesticides and other toxic chemicals that could potentially impact endangered species known to be located within, downstream of, or adjacent to the RMV boundary – the arroyo toad and the southern steelhead. The following pesticides were identified as potential pollutants of concern: Toxaphene, pentachlorophenol (PCP), and glyphosate. Toxaphene is an organochlorine pesticide that was very popular during the 1970s following the banning of DDT. It in turn was banned for all uses in 1990 (WRA, 2002). PCP is also a chlorinated pesticide that is primarily used as a preservative for wood products, and as a general herbicide. PCP is currently being phased out and is a Restricted Use Pesticide that can only be purchased and applied by certified applicators. Glyphosate is a broad-spectrum, nonselective systemic herbicide commonly formulated as Roundup. It tends to bound tightly with sediments, and is not very leachable by stormwater runoff. Its half-life in pond water ranges from 12 days to 10 weeks (WRA, 2002).

Past and current agricultural practices within Planning Area 3 consisted primarily of nursery uses and growing barley. To help identify the presence of legacy and other pesticides from these activities, stormwater runoff samples were analyzed for organochlorine and organophosphate pesticides (Geosyntec Consultants, 2004). Six samples (one sample from six stations) for organochlorine pesticides were below detection. Detection values for most pesticides ranged between 0.1 to 0.6 µg/L. The detection limit for Toxaphene was 1.3 µg/L, which is greater than the water quality criteria (0.73 µg/L). These data indicate that legacy pesticides are generally not present in stormwater runoff from the proposed development area; there is uncertainty, as in the case of Toxaphene, as to whether the legacy pesticides are present at levels of concern due to the detection limit being greater than the water quality standard.

BMPs that will be implemented to address pesticides include non-structural and structural source control and treatment control. EPA has recently banned the pesticides diazinon and chlorpyrifos (commonly used urban pesticides) for most urban applications (USEPA, 2002a). These pesticides, as well as other banned pesticides, will not be used for landscape maintenance. Other source control measures include education programs for owners, occupants, and employees in the proper application, storage, and disposal of pesticides.

While some increase in pesticide use is likely to occur as the result of development due to maintenance of landscaped areas, particularly in the residential of the development,

careful selection, storage, and application of these chemicals will help prevent water quality impacts from occurring.

Trash and Debris

Urban development tends to generate significant amounts of trash and debris. Trash refers to any human-derived material, including paper, plastics, metals, glass and cloth. Debris includes organic material transported by stormwater, including leaves, twigs, and grass clippings. Trash and debris is often characterized as material retained on a 5-mm mesh screen. It contributes to the degradation of receiving waters by imposing an oxygen demand, attracting pests, disturbing physical habitats, clogging storm drains and conveyance culverts and mobilizing nutrients, pathogens, metals, and other pollutants that may be attached to the surface. Sources of trash in developed areas can be both accidental and intentional. During wet weather events, gross debris deposited on paved surfaces can be transported to storm drains, where it is eventually discharged to receiving waters. Trash and debris can also be mobilized by wind and transported directly into waterways.

Urbanization could significantly increase trash and debris loads if left unchecked. However, the proposed BMPs, including source control and treatment BMPs, will minimize the adverse impacts of trash and debris. Source controls such as street sweeping, public education, fines for littering, and storm drain stenciling can be effective in reducing the amount of trash and debris that is available for mobilization during wet and dry weather events. Water quality basins are very effective at trapping trash and debris. Trash and debris are not expected to impact beneficial uses in San Juan Creek.

Chlorine

Chlorine is a potential pollutant of concern because the free form of chlorine is a strong oxidant and is therefore very toxic to aquatic life. with respect to new development, one dry weather concern is the emptying of swimming pools that have not been dechlorinated into local streams. Municipal pools and private pools in areas served by a municipal sanitary system are generally required to be discharged into the sanitary system.

Section XI Planning Area Specific Monitoring Plan

Three interrelated plans form the core of the Adaptive Management Plan for RMV. These are, for the open space/Habitat Reserve, – the Habitat Reserve Monitoring and Management Program (HRMP), for the primary streams/creeks in the open space/Habitat Reserve – the Streambank Monitoring Plan, and for the developed Planning Areas – the WQMP. This section will focus on the last two monitoring plans and layout a brief overview of what will be developed during the final stages of the Master WQMP for PA 3 and PA 4.

WQMP BMP Monitoring Plan

This section focuses on the monitoring and management of the water quality aspects for PA 3 and PA 4. The purpose of this monitoring plan is to have a comprehensive approach to ensuring the water quality objectives of the Basin Plan are met. The plan will include monitoring plans, frequencies, goals, procedures, and specifications and the associated Treatment BMPs.

Streambank Monitoring Plan

The purpose of this monitoring plan is to implement an adaptive program with respect to stream erosion and sedimentation within Gobernadora Canyon and San Juan Creek based on field inspection/observations and quantitative monitoring/qualitative assessment directly downstream of PA 3 and PA 4.

The monitoring program will include customized stream reconnaissance guidelines and specific techniques, which include geomorphic assessments that are useful for the evaluation of stream stability. This methodology applies both geomorphic and hydraulic factors to help identify sources of stability problems base on qualitative trends. The plan will develop an implementation schedule for stream assessment and rehabilitation measures needed over time to ensure stream bank stability upon completion of RMV.

Section XII Cumulative Watershed Impacts

Because the proposed project consists of new impervious surfaces including new roadways, it would result in a permanent increase in runoff and pollutant loading. Operation of the project is subject to the requirements of the County of Orange's NPDES Permit. As a part of these requirements, the County of Orange must

- Consider approved structural treatment control and non-structural source control BMPs for the project site; and
- Construct structural treatment control BMPs where feasible.

Currently, stormwater runoff from within the project limits is untreated. As part of the proposed project, structural treatment control BMPs must be implemented to target the constituents of concern in the stormwater, as well as non-stormwater sources, in runoff from the proposed project. Any BMPs installed, as a part of the proposed project, will be selected from the Orange County approved treatment BMP list. Where feasible, structural treatment control and non-structural source control BMPs will be incorporated into the proposed project. In addition, the structural and non-structural source control BMPs will be used to maximize pollutant treatment where feasible. The technologies that will be considered to address the pollutants of concern for the proposed project are infiltration, bioretention, biofiltration, filtrations, or equivalent devices.

The construction and implementation of the proposed project's increase in impervious surface could contribute to exceeding the waste load allocations in approved TMDLs and impairments in 303(d) listed downstream waterbodies, regardless of which alternative is selected. The implementation of appropriate treatment BMPs as a part of the proposed project to treat the pollutants of concern should adequately address any potential cumulative impacts of constructing or the long-term maintenance and operation of the proposed project. When the alternative with the largest proposed impervious surface is compared with the total watershed area, the proposed impervious surface is less than 1% of the watershed area.

Construction-Related Impacts

The potential impact construction has on water quality is thoroughly discussed in Section VIII of this WQMP. Construction impacts will be minimized through the development and implementation of BMPs and other methods covered in Section VIII. To meet the significance thresholds during the construction phase is through proper implementation of the requirements set forth in the Construction General Permit. BMP selection along with all other related procedures as outlined in the CGP shall be implemented to minimize and prevent potential environmental impacts during the construction phase.

Groundwater Impacts

Although geology and groundwater conditions vary depending on the terrain (Balance Hydrologics, 2001), the impacts of the proposed development on groundwater quality are discussed in a general framework.

The approach taken by the Master Area WQMP to protect groundwater quality is multi-tiered: (1) site design and source control BMPs will be implemented to prevent the discharge of pollutants to the maximum extent practicable, (2) the proposed treatment control BMPs will incorporate infiltration only where there is at least a ten foot separation to groundwater, and (3) where infiltration is proposed, the water will be pretreated in a water quality treatment facility sized to meet MS4 Permit requirements. Some incidental infiltration will occur in the water quality basins and vegetated swales; however, in these facilities, vegetation will provide an adsorptive bottom organic layer that will assist in pollutants uptake and protect groundwater quality.

The only pollutant of concern for which there is a groundwater quality objective is nitrate. The water quality objective for nitrate-nitrogen is 10 mg/L; however, this level is much higher than observed concentrations of nitrate-nitrogen in urban runoff. For example, the range of observed nitrate-nitrogen concentrations from urban land uses in LA County are about 0.3 to 1.4 mg/L. Projected effluent concentrations from the treatment control BMPs ranges from 0.7 to 0.8 mg/L. Therefore, the potential for adversely affecting groundwater quality for this pollutant of concern is not significant.

Compliance with Plans, Policies, Regulations, and Permits

A key requirement that is applicable to PA 3 and PA 4 is compliance with plans, policies, regulations and permits.

<u>Compliance with Plans and Policies</u>

The Ranch Plan WQMP and this Planning Area 3 and 4Master Area Plan WQMP are intended to support the water quality, geomorphic, and habitat goals of the following planning processes:

- Southern NCCP/MSAA/HCP. The Southern Natural Community Conservation Plan/Master Streambed Alteration Agreement/Habitat Conservation Plan (Southern NCCP/MSAA/HCP) is being prepared by the County of Orange in cooperation with the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) in accordance with the provisions of the state natural Community Conservation Planning Act of 1991 (NCCP Act), the California Endangered Species Act (CESA), and the federal Endangered Species Act (FESA). The Southern Orange County Subregion is part of the five-county NCCP Study Area established by the state as the Pilot Study Area under the NCCP Program. The SSHCP was approved in 2007 and the MSAA was approved in 2009.

- San Juan/San Mateo Watersheds SAMP. A Special Area Management Plan (SAMP) was prepared and approved by the U.S. Army Corps of Engineers (USACE) and covers generally those portions of the San Juan Creek and San Mateo Creek watersheds located within the Southern NCCP/MSAA/HCP Subregion. As in the case of the NCCP/MSAA/HCP, the SAMP is a voluntary process. The purpose of the SAMP is to provide for the protection and long-term management of sensitive aquatic resources (biological and hydrological) on a landscape level. The SAMP is also designed to enable economic uses to be permitted within the SAMP study area portions of the San Juan Creek watershed consistent with the requirements of federal law (particularly the federal CWA, including Sections 401 and 404).

This Master Area WQMP has employed and addressed applicable NCCP/MSAA/HCP and SAMP Guidelines and Principles at the sub-basin scale, consistent with the Ranch Plan Conceptual WQMP. In this way, species, habitat, and hydrologic and geomorphic considerations identified through the planning processes have been fully integrated into the PA 3 and 4 Master Area WQMP.

The USACE issued a Long Term 404 Permit to RMV in 2007.The special conditions related to water quality, and how they have been satisfied for PA 3 and PA 4 with this Master Area WQMP, are listed in Table 21.

Table 21: ACOE Proposed RMV Individual Permit Water Quality-Related Special Conditions

#	Special Condition	Compliance
I.B.3	The permittee shall not place water quality and/or water retention basins within the active channel of San Juan Creek, Chiquita Creek, Gobernadora Creek, Verdugo Creek, Cristianitos Creek, Gabino Creek, or Talega Creek.	All PA 3 and PA 4 water quality basins and retention basins are located upland, outside of the 100-year flood plain of San Juan Creek.
I.C.1	The permittee shall abide by all the terms and conditions of the applicable Section 401 certification.	This Master Area WQMP for PA 3 and PA 4 is intended to support the application for 401 certification.
I.C.2	The permittee shall develop and implement master area and sub-area plans for each Planning Area (Ranch Plan EIR Mitigation Measures 4.5-3 and 4.5-4). A copy of the plan shall be submitted to the Corps for review and approval for consistency with the Conceptual WQMP approved as part of the SAMP EIS. The Corps shall have 30- days to review and approve any submitted plan. If the Corps does not provide comments within 30 days, the submitted plan shall be deemed approved. In the event of a disagreement between the Corps requirements and those of the County of Orange, the permittee, Corps and County shall agree on a resolution of said disagreement within 15 days. Copies of annual reports shall be provided to the Corps within 30 days of	This Master Area WQMP for PA 3 and PA 4 will be submitted to the ACOE in compliance with this condition.

#	Special Condition	Compliance
	completion.	
I.D.2	The permittee shall provide wildlife movement corridors along San Juan Creek… Uses within these corridors shall be as follows: d. Infrastructure facilities are allowed including: i) natural treatment systems for water quality treatment and related drainage facilities; ii) outfalls that are located outside of the ordinary high water mark.	Water quality treatment and related facilities have been located within the PA 3 and PA 4 development boundary. Outfall have been located within the San Juan Creek corridor outside of the ordinary high water mark.
I.D.4	The permittee shall use BMPs, including and not limited to detention basins, retention basins, low-water irrigation, increase in pervious surfaces, and/or diversion of runoff to a collection system for re-use for irrigation purposes to prevent dry season runoff from entering San Juan Creek (upstream of Trampas Canyon), Gabino Creek, and Talega Creek from September to mid-October.	PA 3 and PA 4 is located along San Juan Creek downstream from Trampas Canyon. Nevertheless, the WQMP incorporates BMPS, including detention basins, retention basins, bioretention areas, vegetated swales, low-water irrigation, minimization of impervious surfaces, and storage of runoff for irrigation reuse, all of which will prevent dry season runoff from entering San Juan Creek.
I.D.5	The permittee shall eradicate bullfrogs from any water quality treatment basin within 0.5 km of streams known to have arroyo toads. The eradication shall occur at the very least from September to mid-October to interrupt the annual breeding cycle. Permittee may use a variety of approaches to ensure compliance with this condition. Eradication efforts shall be monitored annually as part of the Aquatic Resources Adaptive Management Plan. If eradication efforts are not successful, the permittee shall cause the water quality treatment basin to be dry from September to mid-October by diverting dry season runoff to a collection system for re-use for irrigation purposes.	WQMP Section V, Operation and Maintenance, includes this condition.

Compliance with Local WQMP and MS4 Permit Requirements

BMPs include site design, source control, and treatment control BMPs in compliance with the requirements of the Orange County DAMP/LIP and the Orange County NPDES Permit. The site design, source control, and treatment control BMPs will work in concert to address all of the constituents of concern in runoff from the proposed development area.

Compliance with Mitigation and Regulatory Monitoring Program

In conjunction with the approval of the project, the County Board of Supervisors adopted a Mitigation Monitoring and Reporting Program (MMRP) pursuant to Public Resources Code Section 21081.6. The MMRP included all the project design features (PDF), standard conditions (SC), and mitigation measures (MM) that were adopted in conjunction with approval of the project. In addition, a number of other compliance measures that apply to

the project also serve to reduce environmental impacts. These include provisions from the following:

- Development Agreement requirements
- Planned Community Zoning Regulations/Conditions
- South County Roadway Improvement Program (SCRIP) requirements
- Litigation Settlement Agreement requirements
- Service Provider Agreement requirements

Table 22 below summarizes the conditions that related to water quality and how they have been satisfied for PA 3 and PA 4 with this Master Area WQMP.

Table 22: Conditions and Mitigation Measure Requirements

Condition or Mitigation Measure	Timing	Requirement/Provision	Compliance
MM 4.5-3	Before the approval of a Master Area Plan for each Planning Area	**Water Resources – Master Area Plan-Level WQMP:** Before the approval of a Master Area Plan for each Planning Area, the applicant shall prepare a Master Area Plan WQMP that (i) is consistent with the terms and content of the Draft WQMP (see PDF 4.5-3) and (ii) provides more particularized information and detail concerning how the provisions of the Draft WQMP will be implemented within the area covered by the individual Master Area Plan. At a minimum, each Master Area Plan WQMP will provide supplemental and refined information concerning (i) how site-design, source-control and treatment control BMPs will be implemented at the Master Area Plan level for the area in question, (ii) potential facility sizing and location within the subject Master Area Plan area; and (iii) monitoring, operation and maintenance of stormwater BMPs within the relevant Master Area Plan area.	Master Area Plan WQMP
MM 4.5-4	Before approval of Subarea Plan for any portion of the project area and after approval of Master Area Plan	**Water Resources – Sub-Area Plan-Level WQMP** Before the approval of a Sub-Area Plan for any portion of the project area that is the subject of an approved Master Area Plan, the applicant shall prepare a Sub-Area Plan WQMP that (i) is consistent with the terms and content of the Draft WQMP (see PDF 4.5- 3), (ii) is consistent with the terms and content of the relevant Master Area Plan WQMP (see MM 4.5-3) and (iii) provides more particularized information and detail concerning how the provisions of the Draft WQMP and the relevant Master Area Plan WQMP will be implemented within the area covered by the individual Sub-Area Plan. At a minimum, each Sub-Area Plan WQMP will provide supplemental and refined information concerning:	Sub-Area Plan WQMP

Condition or Mitigation Measure	Timing	Requirement/Provision	Compliance
		(i) Water Resources – Sub-Area Plan-Level WQMP (cont.): How site design, source-control and treatment control BMPs will be implemented at the Sub-Area Plan level for the area in question,	WQMP Section IV
		(ii) Water Resources – Sub-Area Plan-Level WQMP (cont.): The size, location and design features of the individual water resource facilities to be developed within the subject Sub-Area Plan area, and	WQMP Section IV
		(iii) Water Resources – Sub-Area Plan-Level WQMP (cont.): Monitoring, operation, and maintenance of the stormwater BMPs within the relevant Sub-Area Plan area.	WQMP Section V
MM 4.5-6	In conjunction with Master and Subarea Plans	**Water Resources – Combined Flow and Water Quality Control System.** All developments will be designed to achieve flow duration matching, address the water balance, and provide for water quality treatment through a combined flow and water quality control system (termed combined control system). a. Water Resources – Combined Control System Components: The proposed combined control system will include one or more of the following components (see Exhibits 4.5-14, 15 and 16), each of which provides an important function to the system: • Flow Duration Control and Water Quality Treatment (FD/WQ) Basin • Infiltration Basin • Bioinfiltration Swale • Storage Facility for Recycling Water for Non-Domestic Supply • Diversion Conduit to Export Excess Flows out of the Sub-basin.	Per the Conceptual WQMP, combined flow and water quality control system components for PA 3 and PA 4 include a combination of extended detention basins, biofiltration basins, bioretention areas, and harvest and use.
PDF 4.5-1	Before approval of Master Area Plans and Subarea Plans	**Water Resources – Site Design Watershed Planning Principles.** Land use planning guidance criteria were developed as part of the NCCP/HCP and SAMP/MSAA processes to assist in preserving the existing hydrologic functions within the watershed. These principles (the Watershed Planning Principles) were used as a framework to assist in planning the project to minimize	PA 3 and PA 4 site design is consistent with the Draft NCCP/HCP and SAMP/MSAA Watershed Planning Principles

Condition or Mitigation Measure	Timing	Requirement/Provision	Compliance
		project hydrologic impacts and to preserve the natural water resources	
PDF 4.5-2	Before approval of Subarea Plan	**Water Resources – Flood Control Detention Facilities.** Dedicated areas are to be provided throughout the project area to provide sufficient storage for runoff volumes to mitigate increases in peak discharges and to offset impacts of existing development.	Extended detention basins and/or biofiltration basins have been provided throughout the project area that provided storage to mitigate increases in peak discharges as needed.
PDF 4.5-3	Completed and included within certified Final Program EIR 589	**Water Resources – WQMP.** A Conceptual WQMP has been developed for the proposed project in compliance with the Model WQMP requirements of the County of Orange DAMP. The Draft WQMP addresses the following elements:	Approval of Conceptual WQMP

Condition or Mitigation Measure	Timing	Requirement/Provision	Compliance
PDF 4.5-3 (cont.)	Completed and included within certified Final Program EIR 589	• Water Resources – Site-design BMPs: Site design BMPs have been selected to address the creation of a hydrologically functional project design that seeks to mimic the natural hydrologic regime.	Approval of Conceptual WQMP
		• Water Resources – Site-design BMPs: Site design BMPs have been selected to address the creation of a hydrologically functional project design that seeks to mimic the natural hydrologic regime.	
		• Water Resources – Urban Runoff and Stormwater Control Elements: Water balance and flow duration analyses and conceptual combined flow and water quality control systems have been prepared for each sub-basin.	
		• Water Resources – Stormwater BMP Operation and Maintenance Program: An operation and maintenance program has been developed to address the following elements: Maintenance Responsibility, General Operation and Maintenance Activities, Routine Operation and Maintenance Activities and Major Operation and Maintenance Activities.	
		• Water Resources – Stormwater Monitoring Program: A stormwater monitoring program has been developed for the Water Quality BMPs.	
PDF 4.5-4	Before Master Area Plan Approval	**Water Resources – Water Conservation.** Water captured in the combined flow and water quality control system and in flood control detention facilities, where possible, will be percolated, infiltrated and/or re-captured for re-use as a supplemental source of irrigation water.	Retention basins have been incorporated into the Master Area WQMP for PA 3 and PA 4

Section XIII References

CASQA 2003. California Stormwater BMP Handbook, New Development and Redevelopment. California Stormwater Quality Association. January 2003. www.cabmphandbooks.com.

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Pace, Huitt-Zollars, and Geosyntec Consultants 2012. Comprehensive Regional Stormwater Plan. Ranch Plan Planned Community Runoff Management Plan. Prepared for Rancho Mission Viejo, 2012.

PCR Services Corporation and Dudek and Associates, 2002. Geomorphic and Hydrologic Needs of Aquatic and Riparian Endangered Species, Agency Review Draft. Prepared for Rancho Mission Viejo, August 2002.

PCR Services Corporation; PWA, Ltd.; and Balance Hydrologics, Inc., 2002. Baseline Geomorphic and Hydrologic Conditions, Final Version. Prepared for Rancho Mission Viejo, February 2002.

PWA Consultants in Hydrology, Hydrologic Comparison of Baseline and Alternative Land Use Conditions for the San Juan and San Mateo Watersheds, March 2004.

Attachments

Permits: PA140072 (PA3 & PA4 Addendum)

Attachment 1: Preliminary Infiltration Tests

Permits: PA140072 (PA3 & PA4 Addendum)

GMU GEOTECHNICAL, INC.

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August 6, 2014

Mr. Jim Yates
RMV COMMUNITY DEVELOPMENT, LLC
P.O. Box 9
San Juan Capistrano, CA 92693

GMU Project No. 14-001-00

Subject: Screening-Level Infiltration Testing Pertaining to Possible PA-3 Infiltration Basin Locations, Planning Area 3, Rancho Mission Viejo

Dear Mr. Yates:

This report provides the results of preliminary infiltration testing for possible infiltration basin sites located along the southern and western project limits of the Rancho Mission Viejo Planning Area -3.

INFILTRATION TESTING

GMU conducted nine infiltration tests on 7/8/14 through 7/10/14 (Plate1- Infiltration Testing Locations). The screening-level infiltration testing was generally conducted using the open pit falling head procedure for establishing infiltration rate in accordance with the Technical Guidance Document (TGD). The infiltration tests were conducted at depths approximately 4.5 feet to 7 feet below existing ground. The soils at the tested locations varied from silts, clays, and sands, with the sandiest soils existing along the southwestern edge of the PA-3 project limits, and siltier soils along the western and southeastern edge of the PA-3 project limits. The Logs of Test Pits are included in Appendix A of this report.

TEST RESULTS

Infiltration test data is included in Appendix B of this report for TP-1 through TP-9. A minimum of three trials were conducted at each location and the average infiltration rate over the last trial was used to calculate the unadjusted (pre-factor of safety) infiltration rate. The table below summarizes the average infiltration rate for the last trial at each test location.

Location	Avg. Infiltration Rate for Last Trial (in/hr)
TP-1	1.9
TP-2	4.8
TP-3	Infiltration too quick to run test, flow rate from hose at 20 gal/min
TP-4	19.2
TP-5	8.2
TP-6	5.1
TP-7	4.0
TP-8	4.9
TP-9	No Infiltration

Appropriate safety factors should be applied to these unadjusted rates, especially since this is only considered screening-level testing and may not represent actual conditions at future basin locations/elevations. Additional design-level testing will be needed at a later date when the actual basin locations and elevations are known.

Please do not hesitate to call if you have any questions regarding this information.

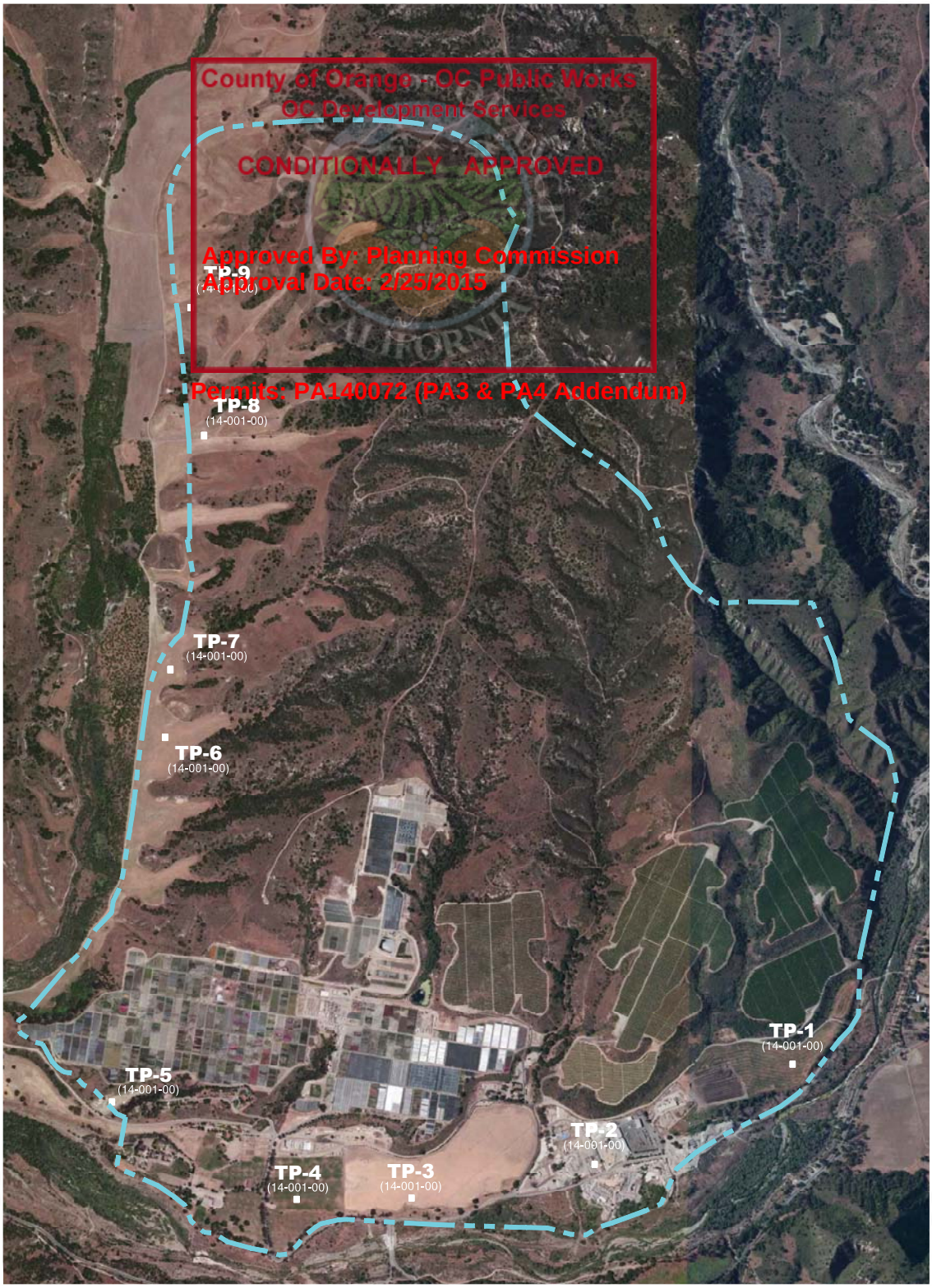
Respectfully submitted,

GMU GEOTECHNICAL, INC.

Aron Taylor, M.S., PG, CEG 2455
Vice President, Principal Engineering Geologist

cc: RBF Consulting (1 PDF copy)
Attn: Mr. Daniel Apt

/14-001-00 (8-6-14)_ Infiltration



Infiltration Test Location Map

GMU GEOTECHNICAL, INC.	Date: August 1, 2014	Plate 1
	Project No.: 14-001-00	

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX A

Geotechnical Exploration Procedures and Logs

GMU GEOTECHNICAL, INC.

APPENDIX A-1

GMU GEOTECHNICAL EXPLORATION PROCEDURES AND LOGS

Our exploration at the subject site consisted of nine test pits. The estimated locations of the explorations are shown on Plate (1) – Infiltration Testing Locations. Our drill holes were logged by a Certified Engineering Geologist and the logs of each test pit are contained in this Appendix A, and the Legend to Logs is presented as Plate A-1 and A-2.

The geologic and engineering field descriptions and classifications that appear on these logs are prepared according to Corps of Engineers and Bureau of Reclamation standards. Major soil classifications are prepared according to the Unified Soil Classification System as modified by ASTM Standard No. 2487. Since the descriptions and classifications that appear on the Log of Test Pits are intended to be that which most accurately describe a given interval of a test pit (frequently an interval of several feet), discrepancies do occur in the Unified Soil Classification System nomenclature between that interval and a particular sample in that interval. For example, an 8-foot-thick interval in a log may be identified as silty sand (SM) while one sample taken within the interval may have individually been identified as sandy silt (ML). This discrepancy is frequently allowed to remain to emphasize the occurrence of local textural variations in the interval.

MAJOR DIVISIONS			Group Letter	Symbol	TYPICAL NAMES
COARSE-GRAINED SOILS More Than 50% Retained On No.200 Sieve Based on The Material Passing The 3-Inch (75mm) Sieve. Reference: ASTM Standard D2487	GRAVELS More Than 50% of Coarse Fraction Retained on No.4 Sieve	Clean Gravels	GW		Well Graded Gravels and Gravel-Sand Mixtures, Little or No Fines.
			GP		Poorly Graded Gravels and Gravel-Sand Mixtures, Little or No Fines.
		Gravels With Fines	GM		Silty Gravels, Gravel-Sand-Silt Mixtures.
			GC		Clayey Gravels, Gravel-Sand-Clay Mixtures.
	SANDS More Than 50% of Coarse Fraction Passes No.4 Sieve	Clean Sands	SW		Well Graded Sands and Gravelly Sands, Little or No Fines.
			SP		Poorly Graded Sands and Gravelly Sands, Little or No Fines.
		Sands With Fines	SM		Silty Sands, Sand-Silt Mixtures.
			SC		Clayey Sands, Sand-Clay Mixtures.
FINE-GRAINED SOILS 50% or More Passe The No.200 Sieve Based on The Material Passing The 3-Inch (75mm) Sieve. Reference: ASTM Standard D2487	SILTS AND CLAYS Liquid Limit Less Than 50%		ML		Inorganic Silts, Very Fine Sands, Rock Flour, Silty or Clayey Fine Sands or Clayey Silts With Slight Plasticity.
			CL		Inorganic Clays of Low To Medium Plasticity, Gravelly Clays, Sandy Clays, Silty Clays, Lean Clays.
			OL		Organic Silts and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS Liquid Limit 50% or Greater		MH		Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts.
			CH		Inorganic Clays of High Plasticity, Fat Clays.
			OH		Organic Clays of Medium To High Plasticity, Organic Silts.
HIGHLY ORGANIC SOILS			PT		Peat and Other Highly Organic Soils.

The descriptive terminology of the logs is modified from current ASTM Standards to suit the purposes of this study

ADDITIONAL TESTS

DS = Direct Shear
HY = Hydrometer Test
TC = Triaxial Compression Test
UC = Unconfined Compression
CN = Consolidation Test
(T) = Time Rate
EX = Expansion Test
CP = Compaction Test
PS = Particle Size Distribution
EI = Expansion Index
SE = Sand Equivalent Test
AL = Atterberg Limits
FC = Chemical Tests
RV = Resistance Value
SG = Specific Gravity
SU = Sulfates
CH = Chlorides
MR = Minimum Resistivity
pH
(N) = Natural Undisturbed Sample
(R) = Remolded Sample
CS = Collapse Test/Swell-Settlement

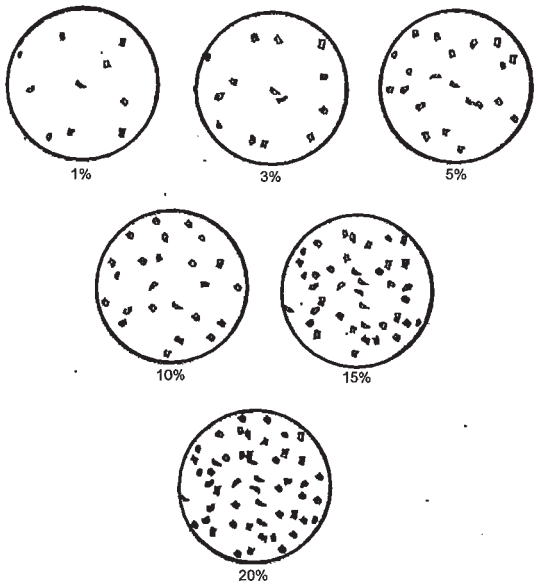
GEOLOGIC NOMENCLATURE

B = Bedding C = Contact J = Joint
F = Fracture Flt = Fault S = Shear
RS = Rupture Surface = Seepage
= Groundwater

SAMPLE SYMBOLS

Undisturbed Sample (California Sample)
Undisturbed Sample (Shelby Tube)
Bulk Sample
Unsuccessful Sampling Attempt
SPT Sample

10: 10 Blows for 12-Inches Penetration
6/4: 6 Blows Per 4-Inches Penetration
P: Push
(13): Uncorrected Blow Counts ("N" Values) for 12-Inches Penetration- Standard Penetration Test (SPT)



GMU GEOTECHNICAL, INC.

LEGEND TO LOGS
ASTM Designation: D 2487
(Based on Unified Soil Classification System)

Plate
A-1

P8-11/16/2012

SOIL DENSITY/CONSISTENCY

FINE GRAINED

Consistency	Field Test	SPT (#blows/foot)	Mod (#blows/foot)
Very Soft	Easily penetrated by thumb, exudes between fingers	<2	<3
Soft	Easily penetrated one inch by thumb, molded by fingers	2-4	3-6
Firm	Penetrated over 1 inch by thumb with moderate effort	4-8	6-12
Stiff	Penetrated about 1/2 inch by thumb with great effort	8-15	12-25
Very Stiff	Readily indented by thumbnail	15-30	25-50
Hard	Indented with difficulty by thumbnail	>30	>50

COARSE GRAINED

Density	Field Test	SPT (#blows/foot)	Mod (#blows/foot)
Very Loose	Easily penetrated with 0.5" rod pushed by hand	<4	<5
Loose	Easily penetrated with 0.5" rod pushed by hand	4-10	5-12
Medium Dense	Easily penetrated 1' with 0.5" rod driven by 5lb hammer	10-30	12-35
Dense	Dificult to penetrat 1' with 0.5" rod driven by 5lb hammer	31-50	35-60
Very Dense	Penetrated few inches with 0.5" rod driven by 5lb hammer	>50	>60

BEDROCK HARDNESS

Density	Field Test	SPT (#blows/foot)
Soft	Can be crushed by hand, soil like and structureless	1-30
Moderately Hard	Can be grooved with fingernails, crumbles with hammer	30-50
Hard	Can't break by hand, can be grooved with knife	50-100
Very Hard	Scratches with knife, chips with hammer blows	>100

MODIFIERS

Trace	1%
Few	1-5%
Some	5-12%
Numerous	12-20%
Abundant	>20%

GRAIN SIZE

Description		Sieve Size	Grain Size	Approximate Size
Boulders		>12"	>12"	Larger than a basketball
Cobbles		3-12"	3-12"	Fist-sized to basketball-sized
Gravel	Coarse	3/4-3"	3/4-3"	Thumb-sized to fist-sized
	Fine	#4-3/4"	0.19-0.75"	Pea-sized to thumb-sized
Sand	Coarse	#10-#4	0.079-0.19"	Rock-salt-sized to pea-sized
	Medium	#40-#10	0.017-0.079"	Sugar-sized to rock salt-sized
	Fine	#200-#40	0.0029-0.017"	Flour-sized to sugar-sized
Fines		passing #200	<0.0029"	Flour-sized and smaller

MOISTURE CONTENT

Dry- Very little or no moisture
Damp- Some moisture but less than optimum
Moist- Near optimum
Very Moist- Above optimum
Wet/Saturated- Contains free moisture

GMU GEOTECHNICAL, INC.

LEGEND TO LOGS

ASTM Designation: D 2487
(Based on Unified Soil Classification System)

Plate
A-2

Project: RMV Planning Area 3
Project Location: Rancho Mission Viejo, Ca.
Project Number: 14-001-00

Log of Test Pit TP-1

Sheet 1 of 1

Date(s) Excavated	7/7/2014	Logged By	KMF	Checked By	
Excavation Equipment	Backhoe	Excavation Contractor	JES Engineering	Total Depth of Test Pit	5.5 feet
Sampling Method(s)				Approx. Surface Elevation, ft MSL	335.0
Groundwater Depth [Elevation], feet		Test Pit Dimensions	Width: 24 in; Length: 13 ft; Depth: 5.5 ft		
Remarks					

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
2	ARTIFICIAL FILL, UNDOCUMENTED (Qaf)	SILTY SAND to SANDY SILT (SM to ML); light brown, dry to damp, fine to coarse grained sand, some trash	334	2						
		SILTY SAND to SANDY SILT (SM to ML); light reddish brown, damp to moist, medium dense, fine to medium grained sand with some coarse grained sand and subangular to subrounded gravel to cobbles up to 8 inches in diameter, minor amounts of trash and asphalt pieces	332							
4	TERRACE DEPOSITS (Qt)	SILTY SAND (SM); reddish brown, damp, fine to medium grained sand with some coarse grained sand, numerous subrounded gravel and cobbles up to 10 inches in diameter and rare boulders up to 18 inches in diameter	330	4						

TP_REV1 14-001-00.GPJ GM&U.GDT 8/1/14

GMU GEOTECHNICAL, INC.

Project: RMV Planning Area 3
Project Location: Rancho Mission Viejo, Ca.
Project Number: 14-001-00

Log of Test Pit TP-2

Sheet 1 of 1

Date(s) Excavated	7/7/2014	Logged By	KMF	Checked By	
Excavation Equipment	Backhoe	Excavation Contractor	JES Engineering	Total Depth of Test Pit	7.0 feet
Sampling Method(s)				Approx. Surface Elevation, ft MSL	310.0
Groundwater Depth [Elevation], feet		Test Pit Dimensions	Width: 24"; Length: 8 ft;	Depth: 7 ft	
Remarks					

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
	ARTIFICIAL FILL, UNDOCUMENTED (Qaf)	3/4 inch crushed gravel parking lot base								
		SILTY GRAVEL with SAND (GM); reddish brown, damp, medium dense/soft, abundant subangular to subrounded gravel and cobbles up to 8 inches in diameter								
2	TERRACE DEPOSITS (Qt)	SILTY SAND to SANDY SILT (SM to ML); light brown, damp to moist, medium dense, abundant gravel and some cobbles up to 6 inches in diameter, rare boulders up to 18 inches in diameter	308	2						
4			306	4						
6			304	6						

TP_REV1 14-001-00.GPJ GM&U.GDT 8/1/14

GMU GEOTECHNICAL, INC.

Project: RMV Planning Area 3
Project Location: Rancho Mission Viejo, Ca.
Project Number: 14-001-00

Log of Test Pit TP-3

Sheet 1 of 1

Date(s) Excavated	7/7/2014	Logged By	KMF	Checked By	
Excavation Equipment	Backhoe	Excavation Contractor	JES Engineering	Total Depth of Test Pit	6.0 feet
Sampling Method(s)				Approx. Surface Elevation, ft MSL	298.0
Groundwater Depth [Elevation], feet		Test Pit Dimensions	Width: 2 ft; Length: 10.5 ft; Depth: 6 ft		
Remarks					

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
2	ARTIFICIAL FILL, UNDOCUMENTED (Qaf)	SILTY SAND (SM); light gray brown, dry to damp, loose, fine to medium grained sand	296	2						
	TERRACE DEPOSITS (Qt)	SILT (ML); gray and orange, dry, soft								
4		SAND to SILTY SAND (SP to SM); light gray brown, dry to damp, loose, fine to medium grained sand with some coarse grained sand, slight caving	294	4						
6			292	6						

TP_REV1 14-001-00.GPJ GM&U.GDT 8/1/14

GMU GEOTECHNICAL, INC.

Project: RMV Planning Area 3 **Project Location:** Rancho Mission Viejo, Ca. **Project Number:** 14-001-00	**Log of Test Pit TP-4** Sheet 1 of 1

Date(s) Excavated: 7/7/2014	Logged By: KMF		Checked By:
Excavation Equipment: Backhoe	Excavation Contractor: JES Engineering		Total Depth of Test Pit: 6.5 feet
Sampling Method(s):			Approx. Surface Elevation, ft MSL: 294.0
Groundwater Depth [Elevation], feet:	Test Pit Dimensions: Width: 2 ft; Length: 10 ft; Depth: 6.5 ft		
Remarks:			

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
	ARTIFICIAL FILL/DISTURBED SOIL (Qaf)	SANDY SILT (ML); light gray brown, dry to damp, firm, fine to medium grained sand								
	TERRACE DEPOSITS (Qt)	SANDY SILT to SILTY SAND (ML to SM); light brown with some orange mottles, damp, firm/medium dense, fine grained sand								
2			292	2						
4		SAND to SILTY SAND (SP to SM); light brown gray with some orange staining, damp to moist, loose, fine to medium grained sand, slight caving	290	4						
6			288	6						

TP_REV1 14-001-00.GPJ GM&U.GDT 8/1/14

GMU GEOTECHNICAL, INC.

Project: RMV Planning Area 3
Project Location: Rancho Mission Viejo, Ca.
Project Number: 14-001-00

Log of Test Pit TP-5B

Sheet 1 of 1

Date(s) Excavated	7/7/2014	Logged By	KMF	Checked By	
Excavation Equipment	Backhoe	Excavation Contractor	JES Engineering	Total Depth of Test Pit	7.0 feet
Sampling Method(s)				Approx. Surface Elevation, ft MSL	270.0
Groundwater Depth [Elevation], feet		Test Pit Dimensions	Width: 2 ft; Length: 9 ft;	Depth: 7 ft	
Remarks					

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
0	**TERRACE DEPOSITS (Qt)**	SANDY SILT to SILTY SAND (ML to SM); brown, dry to moist, medium dense, some subrounded cobbles up to 10 inches in diameter								
2			268	2						
4			266	4						
		SILTY SAND to SAND (SM to SP); brown, moist, loose, fine to medium grained sand								
6			264	6						

TP_REV1 14-001-00.GPJ GM&U.GDT 8/1/14

GMU GEOTECHNICAL, INC.

Project: RMV Planning Area 3
Project Location: Rancho Mission Viejo, Ca.
Project Number: 14-001-00

Log of Test Pit TP-6

Sheet 1 of 1

Date(s) Excavated	7/7/2014	Logged By	KMF	Checked By	
Excavation Equipment	Backhoe	Excavation Contractor	JES Engineering	Total Depth of Test Pit	5.5 feet
Sampling Method(s)				Approx. Surface Elevation, ft MSL	342.0
Groundwater Depth [Elevation], feet		Test Pit Dimensions	Width: 2ft; Length: 8 ft;	Depth: 5.5 ft	
Remarks					

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
2	**SLOPE WASH (Qsw)**	SILTY SAND to SANDY SILT (SP to SM); light gray brown to light brown gray, dry to damp, loose to medium dense, fine to medium grained sand with some clay, becomes sandier with depth	340	2						
4			338	4						

TP_REV1 14-001-00.GPJ GM&U.GDT 8/1/14

GMU GEOTECHNICAL, INC.

Project: RMV Planning Area 3
Project Location: Rancho Mission Viejo, Ca.
Project Number: 14-001-00

Log of Test Pit TP-7

Sheet 1 of 1

Date(s) Excavated	7/7/2014	Logged By	KMF	Checked By	
Excavation Equipment	Backhoe	Excavation Contractor	JES Engineering	Total Depth of Test Pit	6.0 feet
Sampling Method(s)				Approx. Surface Elevation, ft MSL	356.0
Groundwater Depth [Elevation], feet		Test Pit Dimensions	Width: 2 ft Length: 9.5 ft; Depth: 6 ft		
Remarks					

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
0	**SLOPE WASH (Qsw)**	SILTY SAND to SANDY SILT (SM to ML); light brown gray, damp, loose to medium dense, fine to medium grained sand, some clay								
2			354	2						
4		moist	352	4						
6			350	6						

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GMU GEOTECHNICAL, INC.

Project: RMV Planning Area 3
Project Location: Rancho Mission Viejo, Ca.
Project Number: 14-001-00

Log of Test Pit TP-8

Sheet 1 of 1

Date(s) Excavated	7/7/2014	Logged By	KMF
Excavation Equipment	Backhoe	Excavation Contractor	JES Engineering
Sampling Method(s)			
Groundwater Depth [Elevation], feet		Test Pit Dimensions	Width: 2 ft; Length: 7 ft
Remarks			

Checked By

Total Depth of Test Pit: 5.0 feet

Approx. Surface Elevation, ft MSL: 385.0

Depth: 5 ft

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
0	SLOPE WASH (Qsw)	SILTY SAND to SANDY SILT (SM to ML); light brown gray, damp to moist, fine to medium grained sand, some clay	384	0						
2			382	2						
4			380	4						

TP_REV1 14-001-00.GPJ GM&U.GDT 8/1/14

GMU GEOTECHNICAL, INC.

Project: RMV Planning Area 3
Project Location: Rancho Mission Viejo, Ca.
Project Number: 14-001-00

Log of Test Pit TP-9

Sheet 1 of 1

Date(s) Excavated	7/7/2014	Logged By	KMF	Checked By	
Excavation Equipment	Backhoe	Excavation Contractor	JES Engineering	Total Depth of Test Pit	4.5 feet
Sampling Method(s)				Approx. Surface Elevation, ft MSL	380.0
Groundwater Depth [Elevation], feet		Test Pit Dimensions	Width: 2 ft Length: 7 ft	Depth: 4.5 ft	
Remarks					

DEPTH, feet	GEOLOGICAL CLASSIFICATION AND DESCRIPTION	ENGINEERING CLASSIFICATION AND DESCRIPTION	ELEVATION, feet	DEPTH, feet	SOIL SYMBOL	SAMPLE	TEST DATA: MOISTURE CONTENT, %	TEST DATA: DRY UNIT WEIGHT, pcf	TEST DATA: MAXIMUM DENSITY, pcf	TEST DATA: ADDITIONAL TESTS
0	SLOPE WASH (Qsw)	SANDY SILT with CLAY (ML); brown gray, damp to moist, firm to stiff, fine to medium grained sand	378	2						
2			376	4						
4										

TP_REV1 14-001-00.GPJ GM&U.GDT 8/1/14

GMU GEOTECHNICAL, INC.

APPENDIX B

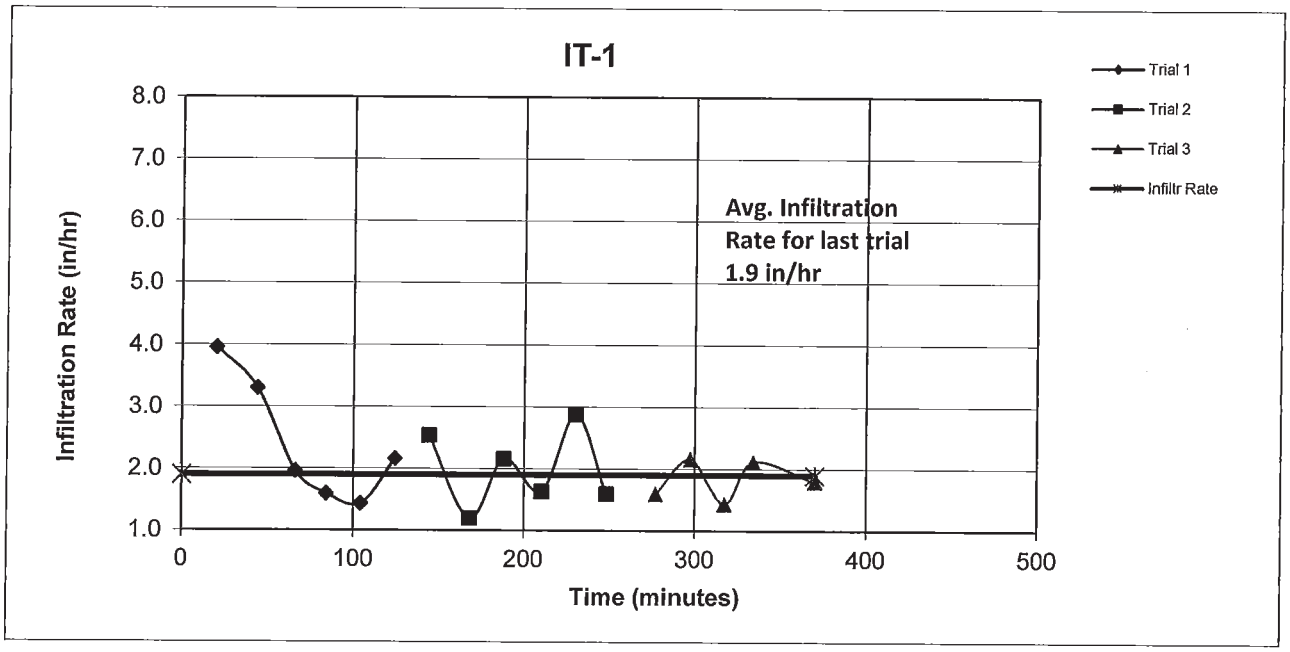
Infiltration Test Results

GMU GEOTECHNICAL, INC.

INFILTRATION RATE - Open Pit Falling Head Procedure

Job Number 14-001-00 TP- dimensions Depth= 6 ft
IT- 1 Width= 2.5
Test Date 7/8/2014 Length= 10 Elev 335

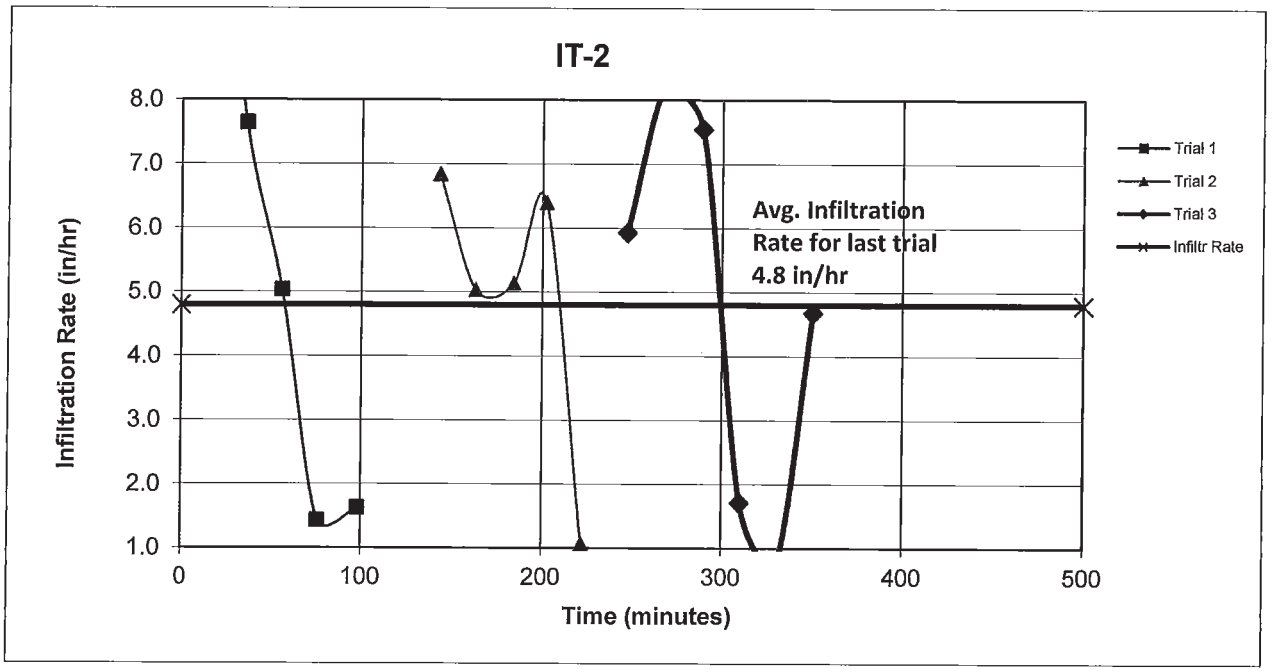
Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive trials 10% criteria
Trial # 1	10:47			4.44	1.56				
	11:07	20	20	4.56	1.45	0.11	4.0	2.4	N/A
	11:31	24	44	4.66	1.34	0.11	3.3		
	11:53	22	66	4.72	1.28	0.06	2.0		
	12:11	18	84	4.76	1.24	0.04	1.6		
	12:31	20	104	4.80	1.20	0.04	1.4		
	12:51	20	124	4.86	1.14	0.06	2.2		
Trial # 2	12:54			4.38	1.62				
	13:11	17	144	4.44	1.56	0.06	2.5	2.0	20.0%
	13:35	24	168	4.48	1.52	0.04	1.2		
	13:55	20	188	4.54	1.46	0.06	2.2		
	14:17	22	210	4.59	1.41	0.05	1.6		
	14:37	20	230	4.67	1.33	0.08	2.9		
	14:55	18	248	4.71	1.29	0.04	1.6		
Trial # 3	14:57			4.39	1.61				
	15:24	27	277	4.45	1.55	0.06	1.6	1.9	6.6%
	15:44	20	297	4.51	1.49	0.06	2.2		
	16:04	20	317	4.55	1.45	0.04	1.4		
	16:21	17	334	4.60	1.40	0.05	2.1		
	16:57	36	370	4.69	1.31	0.09	1.8		



INFILTRATION RATE - Open Pit Falling Head Procedure

Job Number 14-001-00 **IR- dimensions** Depth= 7 ft
IT -2 Width= 2.25
Test Date 7/8/2014 Length= 8 Elev 310

Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive trials 10% criteria
Trial # 1	11:24		0.0	6.00	1.00				
	11:44	20	20	6.23	0.77	0.33	11.9		
	12:00	16	36	6.40	0.60	0.17	7.6		
	12:20	20	56	6.54	0.46	0.14	5.0	5.5	
	12:40	20	76	6.58	0.42	0.04	1.4		
	13:02	22	98	6.63	0.37	0.05	1.6		
Trial # 2	13:27:00		123.0	5.87	1.13				
	13:47:00	20	143.0	6.06	0.94	0.19	6.8		
	14:07:00	20	163.0	6.20	0.80	0.14	5.0		
	14:28:00	21	184.0	6.35	0.65	0.15	5.1	4.9	12.8%
	14:46:00	18	202.0	6.51	0.49	0.16	6.4		
	15:06:00	20	222.0	6.54	0.46	0.03	1.1		
Trial # 3	15:14:00		230.0	5.90	1.10				
	15:31:00	17	247.0	6.04	0.96	0.14	5.9		
	15:52:00	21	268.0	6.28	0.72	0.24	8.2		
	16:13:00	21	289.0	6.50	0.50	0.22	7.5	4.8	1.5%
	16:34:00	21	310.0	6.55	0.45	0.05	1.7		
	16:54:00	20	330.0	6.57	0.43	0.02	0.7		
	17:14:00	20	350.0	6.70	0.30	0.13	4.7		



INFILTRATION RATE - Open Pit Falling Head Procedure

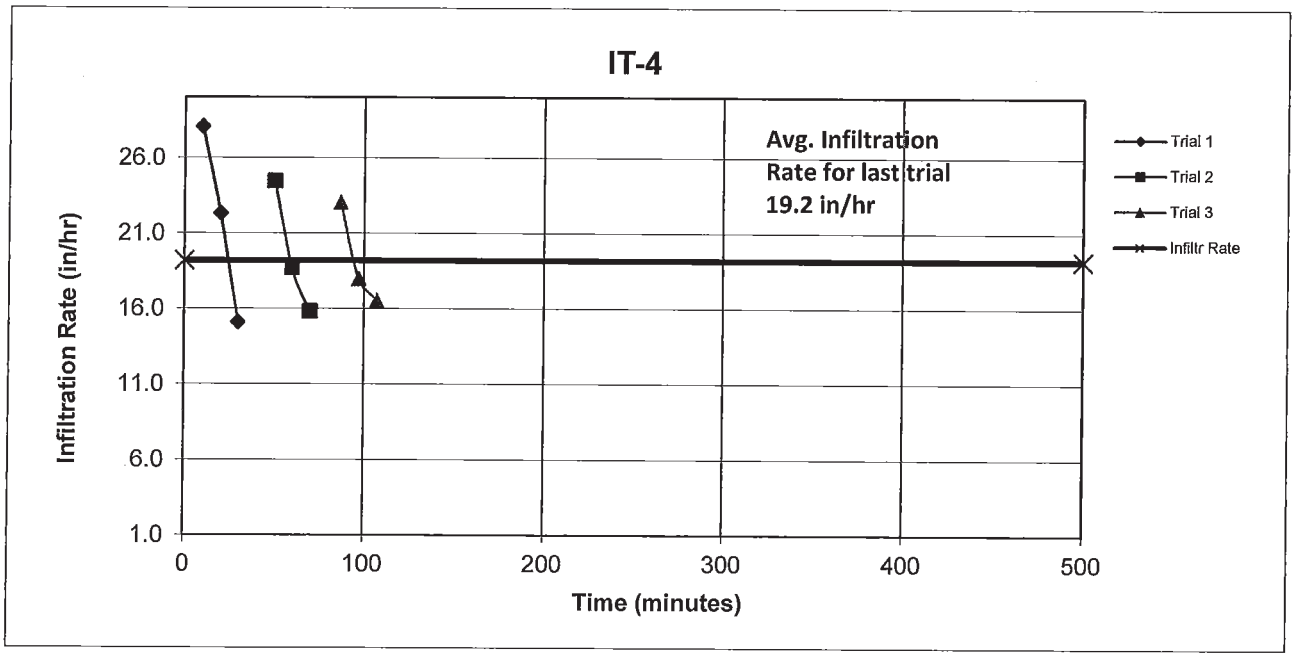
Job Number 14-001-00 **TP- dimensions** Depth= 6 ft
IT -3 Width= 2
Test Date 7/8/2014 Length= 9.5 Elev 244.0

Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive trials 10% criteria
Trial # 1	Infiltration too quick to read. Flow rate from hose is 10 gal/ 30 sec.								
	Attempted to fill test pit, filled for twenty minutes, achieved only 4' of water which quickly infiltrated.							#DIV/0!	

INFILTRATION RATE - Open Pit Falling Head Procedure

Job Number 14-001-00 | **IT** -4 | **Test Date** 02/12/14-02/13/14 | LP- dimensions Depth= 10.5 ft, Width= 2 ft, Length= 4 ft | Elev 294

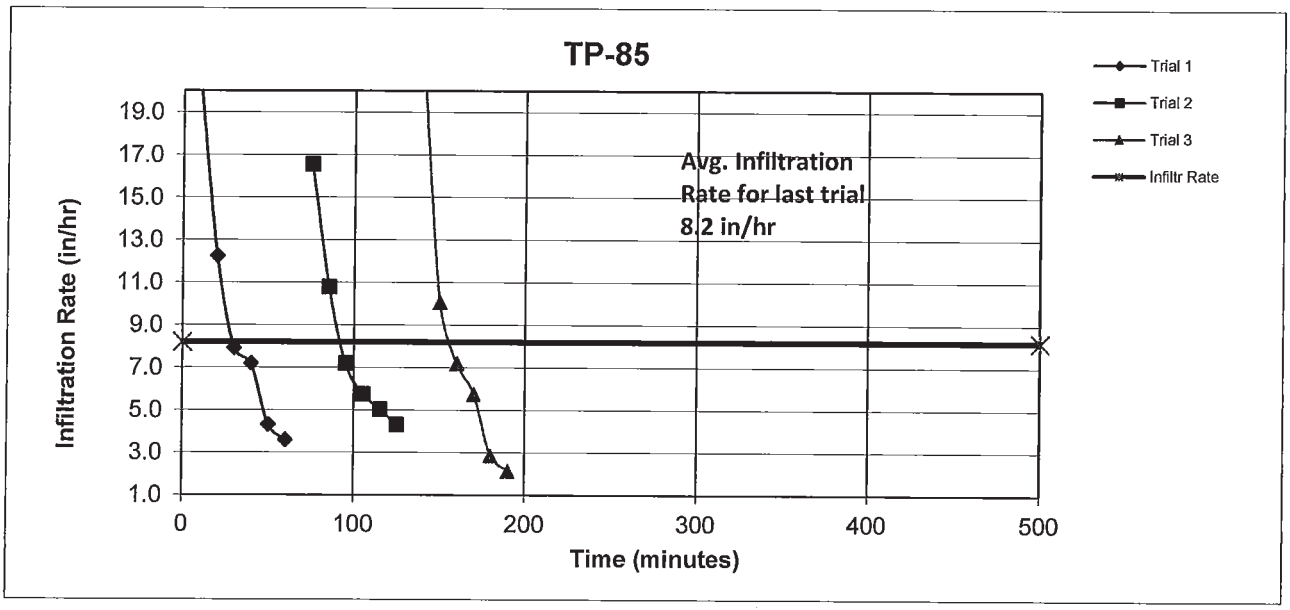
Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive trials 10% criteria
Trial # 1	8:04			5.00	5.45				
	8:14	10	10	5.25	5.06	0.39	28.1		
	8:24	10	20	5.75	4.75	0.31	22.3	21.8	N/A
	8:34	10	30	5.96	4.54	0.21	15.1		
Trial # 2	8:44			5.02	5.48				
	8:54	10	50	5.36	5.14	0.34	24.5		
	9:04	10	60	5.62	4.88	0.26	18.7	19.7	11.0%
	9:14	10	70	5.84	4.66	0.22	15.8		
Trial # 3	9:21			5.01	5.49				
	9:31	10	87	5.33	5.17	0.32	23.0		
	9:41	10	97	5.58	4.92	0.25	18.0	19.2	2.5%
	9:51	10	107	5.81	4.69	0.23	16.6		



INFILTRATION RATE - Open Pit Falling Head Procedure

Job Number 14-001-00 TP- dimensions Depth= 7 ft
TP -5 Width= 2.5
Test Date 7/10/2014 Length= 8 Elev 270

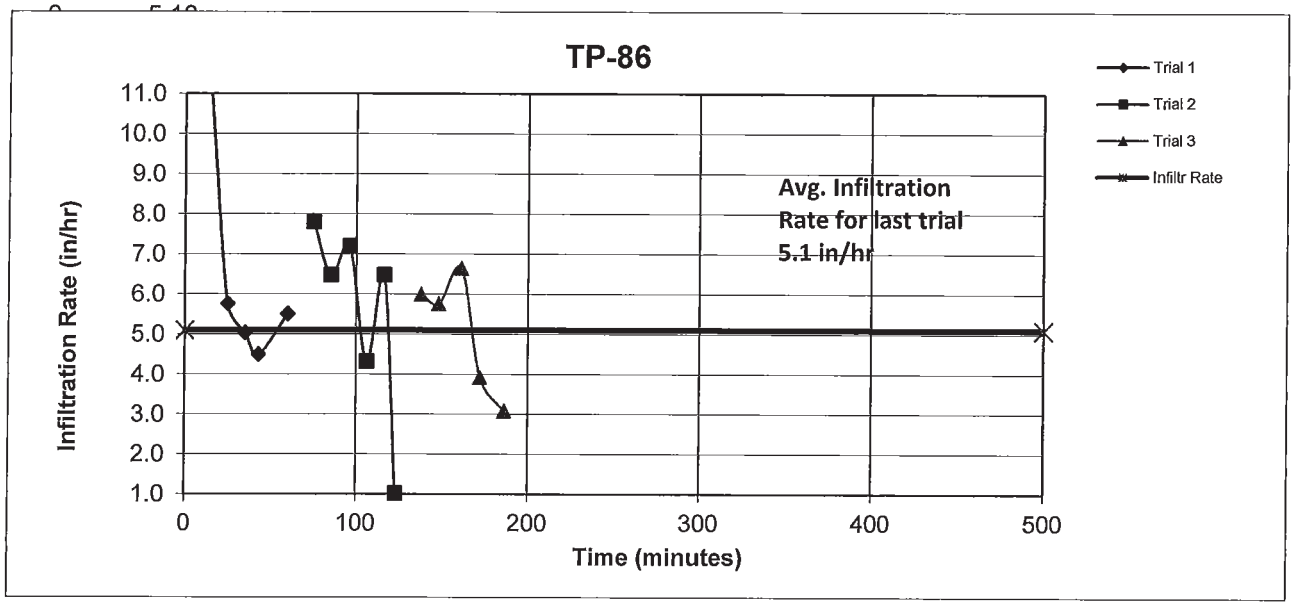
Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive trials 10% criteria
Trial # 1	7:20			6.15	0.85				
	7:30	10	10	6.43	0.57	0.28	20.2	9.2	N/A
	7:40	10	20	6.60	0.40	0.17	12.2		
	7:50	10	30	6.71	0.29	0.11	7.9		
	8:00	10	40	6.81	0.19	0.10	7.2		
	8:10	10	50	6.87	0.13	0.06	4.3		
	8:20	10	60	6.92	0.08	0.05	3.6		
Trial # 2	8:25			6.15	0.85				
	8:35	10	75	6.38	0.62	0.23	16.6	8.3	11.6%
	8:45	10	85	6.53	0.47	0.15	10.8		
	8:55	10	95	6.63	0.37	0.10	7.2		
	9:05	10	105	6.71	0.29	0.08	5.8		
	9:15	10	115	6.78	0.22	0.07	5.0		
	9:25	10	125	6.84	0.16	0.06	4.3		
Trial # 3	9:30			6.17	0.83				
	9:40	10	140	6.46	0.54	0.29	20.9	8.2	1.5%
	9:50	10	150	6.60	0.40	0.14	10.1		
	10:00	10	160	6.70	0.30	0.10	7.2		
	10:10	10	170	6.78	0.22	0.08	5.8		
	10:20	10	180	6.82	0.18	0.04	2.9		
	10:30	10	190	6.85	0.15	0.03	2.2		
Trial # 4									



INFILTRATION RATE - Open Pit Falling Head Procedure

Job Number 14-001-00 TP- dimensions Depth= 8 ft
TP -6 Width= 2
Test Date 7/9/2014 Length= 7 Elev 244

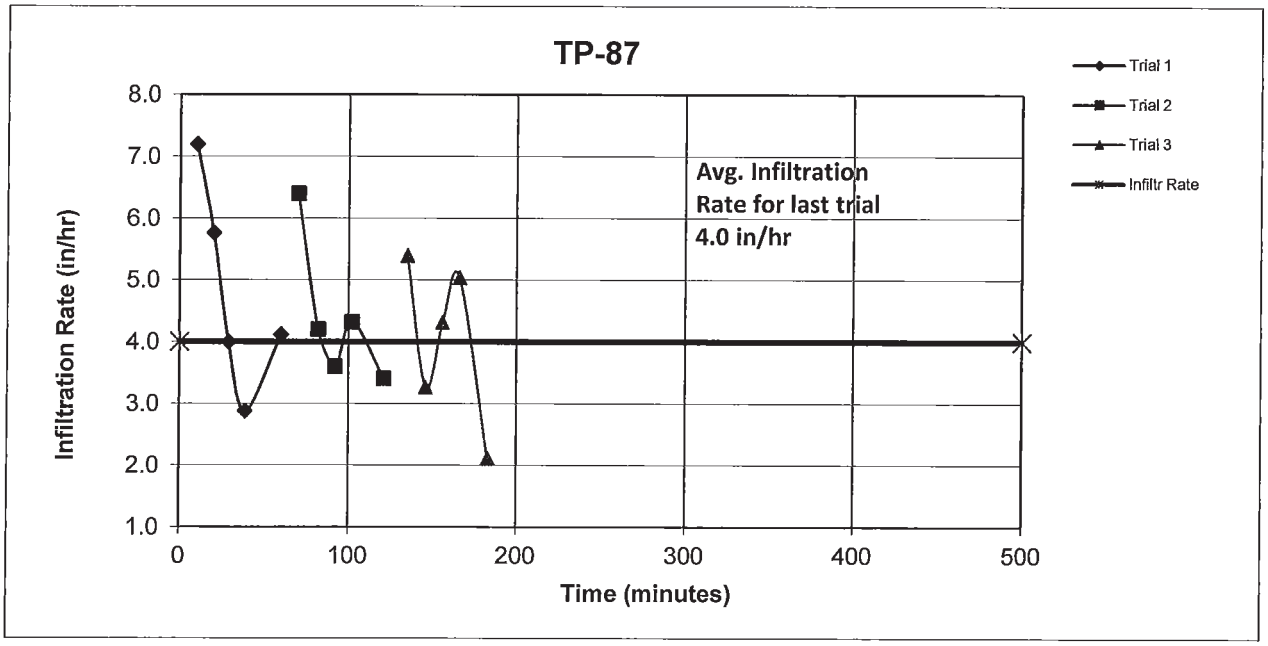
Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive trials 10% criteria
Trial # 1	7:16			4.77	3.23				
	7:31	15	15	4.94	3.06	0.23	11.0	6.4	N/A
	7:41	10	25	5.02	2.98	0.08	5.8		
	7:51	10	35	5.09	2.91	0.07	5.0		
	7:59	8	43	5.14	2.86	0.05	4.5		
	8:16	17	60	5.27	2.73	0.13	5.5		
Trial # 2	8:19			4.69	3.31				
	8:31	12	75	4.82	3.18	0.13	7.8	5.6	14.7%
	8:41	10	85	4.91	3.09	0.09	6.5		
	8:52	11	96	5.02	2.98	0.11	7.2		
	9:02	10	106	5.08	2.92	0.06	4.3		
	9:12	10	116	5.17	2.83	0.09	6.5		
	9:19	7	123	5.18	2.82	0.01	1.0		
Trial # 3	9:22			4.69	3.31				
	9:34	12	138	4.79	3.21	0.10	6.0	5.1	9.2%
	9:44	10	148	4.87	3.13	0.08	5.8		
	9:57	13	161	4.99	3.01	0.12	6.6		
	10:08	11	172	5.05	2.95	0.06	3.9		
	10:22	14	186	5.11	2.89	0.06	3.1		



INFILTRATION RATE - Open Pit Falling Head Procedure

Job Number 14-001-00 TP- dimensions Depth= 6 ft
TP -7 Width= 2
Test Date 7/9/2014 Length= 8.5 356

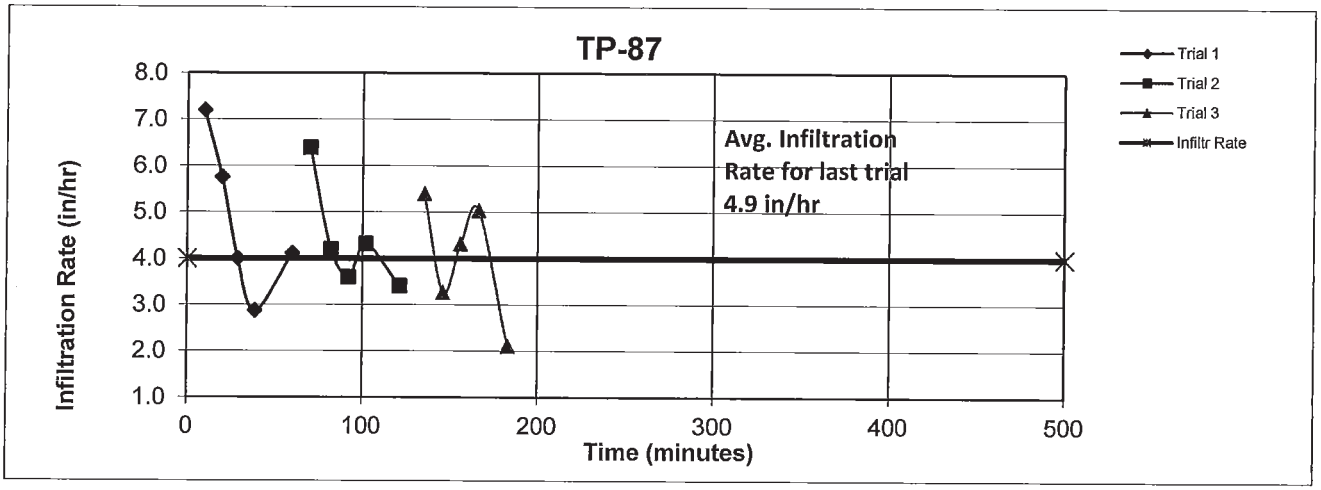
Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive trials 10% criteria
Trial # 1	7:26			4.00	1.00				
	7:36	10	10	5.00	1.00	0.10	7.2		
	7:46	10	20	5.08	0.92	0.08	5.8		
	7:55	9	29	5.13	0.87	0.05	4.0	4.8	N/A
	8:05	10	39	5.17	0.83	0.04	2.9		
	8:26	21	60	5.29	0.71	0.12	4.1		
Trial # 2	8:27			4.86	1.14				
	8:36	9	70	4.94	1.06	0.08	6.4		
	8:48	12	82	5.01	0.99	0.07	4.2		
	8:58	10	92	5.06	0.94	0.05	3.6	4.4	9.2%
	9:08	10	102	5.12	0.88	0.06	4.3		
	9:27	19	121	5.21	0.79	0.09	3.4		
Trial # 3	9:29			4.87	1.13				
	9:41	12	135	4.96	1.04	0.09	5.4		
	9:52	11	146	5.01	0.99	0.05	3.3		
	10:02	10	156	5.07	0.93	0.06	4.3	4.0	8.8%
	10:12	10	166	5.14	0.86	0.07	5.0		
	10:29	17	183	5.19	0.81	0.05	2.1		



INFILTRATION RATE - Open Pit Falling Head Procedure

Job Number 14-001-00 **TP- dimensions** Depth= 5.58 ft
TP -8 Width= 2
Test Date 7/9/2014 Length= 7 ele 385

Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive trials
Trial # 1	11:11			4.31	1.27				
	11:32		21	4.58	1.00	0.27	9.3		
	11:42	10	31	4.72	0.86	0.14	10.1		
	11:52	10	41	4.80	0.78	0.08	5.8	7.0	N/A
	12:02	10	51	4.88	0.72	0.06	4.3		
	12:11	9	60	4.93	0.65	0.07	5.6		
Trial # 2	12:14			4.30	1.28				
	12:24	10	73	4.40	1.18	0.10	7.2		
	12:34	10	83	4.49	1.09	0.09	6.5		
	12:44	10	93	4.56	1.02	0.07	5.0	5.4	29.7%
	12:54	10	103	4.62	0.96	0.06	4.3		
	13:04	10	113	4.70	0.88	0.08	5.8		
	13:14	10	123	4.75	0.83	0.05	3.6		
Trial # 3	13:31			4.34	1.24				
	13:41	10	150	4.41	1.17	0.07	5.0		
	13:51	10	160	4.49	1.09	0.08	5.8		
	14:01	10	170	4.57	1.01	0.08	5.8	4.9	9.8%
	14:11	10	180	4.61	0.97	0.04	2.9		
	14:21	10	190	4.69	0.89	0.08	5.8		
	14:31	10	200	4.75	0.83	0.06	4.3		



INFILTRATION RATE - Open Pit Falling Head Procedure

Job Number 14-001-00 **TP dimensions** Depth= 6 ft
IT 9 Width= 2
Test Date 7/9/2014 Length= 7.5 Elev 380

Test No.	Time (hour:min)	ΔT (min)	Cumulative Time (min)	Water Depth from ground surface (ft)	Height of Water column (ft)	ΔD (feet)	Infiltration Rate (in/hr)	Avg Infiltr Rate (in/hr)	% change in succesive
Trial # 1	Infiltration too slow to run test.								
	Fall 1/8 inch in 115 minutes								
								#DIV/0!	

Attachment 2: SDRWQCB Exemption Letter

Permits: PA140072 (PA3 & PA4 Addendum)

CALIFORNIA Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

California Regional Water Quality Control Board, San Diego Region

March 13, 2014

Mary Anne Skorpanich
Manager, OC Watersheds
Orange County Public Works
2301 N. Glassell Street
Orange, California 92865-2773

In reply refer to:
PIN number: CW-658018:lwalsh

Subject: **Rancho Mission Viejo Development Project Compliance with Development Planning Requirements Under the South Orange County Municipal Separate Storm Sewer System (MS4) Permit, Order No. R9-2009-0002**

Ms. Skorpanich:

The South Orange County Municipal Separate Storm Sewer System (MS4) Permit, Order No. 2009-0002 (Order), provision F.1.d(11) provides an alternative method of compliance for development projects which are based on acceptable watershed and/or sub-watershed scale planning and best management practices (BMP) site design criteria. By letter dated January 21, 2014, you requested the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) acceptance of the County approved regional storm water planning and site design principles for the Rancho Mission Viejo Ranch Development Project (Project) pursuant to provision F.1.d(11) of the Order. The Project is a large master planned development comprised of 23,000 acres in the south-eastern portion of Orange County.

As you know, provision F.1.d of the Order requires each south Orange County Copermittee to impose requirements on Priority Development Projects (PDPs) to manage water quality and hydromodification impacts of the discharges from these PDPs. Further, provision F.1.d(11) of the Order allows a Copermittee to accept a regional watershed and/or sub watershed scale low impact development (LID) BMP project design, for development projects greater than 100 acres or smaller than 100 acres in size, but part of a larger common plan of development that is over 100 acres. This provision also requires that the San Diego Water Board make a determination as to the acceptability of the watershed and/or sub watershed based design standards.

You indicated in your February 4, 2014 email that the County of Orange relied upon the following technical and planning documents to determine that the Project design satisfies provision F.1.d(11) of the Order:

1. The Ranch Plan, Master Plan of development submitted to and approved by the Orange County Board of Supervisors on November 8, 2004;

2. The Ranch Plan Program Final Environmental Impact Report (EIR) 589 certified by the Orange County Board of Supervisors on November 8, 2004 with approval of the Ranch Plan;
3. Addendum No. 1 to the Final EIR 589: July 26, 2006 used in conjunction with approval of Planning Area (PA)1;
4. Addendum No. 1.1 to Final EIR 589: February 24, 2011, and PA2 Addendum to Final EIR 589: March 27, 2013 used in conjunction with Planning Commission approval of PA2;
5. The comprehensive regional storm water plan: Ranch Plan Planned Community Runoff Management Plan (ROMP) dated April 16, 2013; and
6. The San Juan Creek Watershed Study, (PACE Engineering, Inc.): July 2010.

You further indicated that these documents describe the entire Project (i.e. to full build out) and the County of Orange's finding of applicability of provision F.1.d(11) applies to all phases of the Project.

The documents you have identified supports the County's determination that the Project is designed using watershed and sub-watershed scale based water quality, hydrologic, and fluvial geomorphologic planning principles. The County approved storm water planning and site design principles for the Project you have cited satisfy the requirements of provision F.1.d(11) of the Order and the County may proceed with any remaining approvals of the Project on that basis.

In the subject line of any response, please include the Primary Identification Number (PIN) CW-658018:lwalsh. If you would like to discuss this matter further please contact Laurie Walsh at (619) 521-3373, email: Laurie.Walsh@waterboards.ca.gov.

Respectfully,

David W. Gibson
Executive Officer
California Regional Water Quality Control Board, San Diego Region

DWG:dtb:esb:law

cc: Distribution list via email: Orange County Copermittees

Tech Staff Info & Use	
Order No.	R9-2009-0002
Party ID	525472
NPDES No.	CAS108740
Reg. Measure ID	332672
Place ID	CW-658018

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San Diego Region
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http:// www.waterboards.ca.gov/sandiego

April 25, 2012

In reply refer to:
Place No. 658018:ebecker

Chris Crompton
OC Watersheds/Environmental Resources
OC Public Works Department
300 N. Flower Street
Santa Ana, CA 92703

Permits: PA140072 (PA3 & PA4 Addendum)

Dear Mr. Crompton:

SUBJECT: San Diego Water Board Comments on Draft South Orange County Hydromodification Management Plan (Draft HMP) Dated December, 2011

The San Diego Regional Water Quality Control Board, San Diego Region (San Diego Water Board) has reviewed the *Draft South Orange County Hydromodification Management Plan* (draft HMP) dated December, 2011. The HMP is required per section F.1.h of Order No. R9-2009-0002, the South Orange County Municipal Storm Water Permit (Permit), and was developed by the Copermittee entities regulated by the Permit including the County of Orange, the Incorporated Cities of Orange County, and the Orange County Flood Control District.

The draft HMP is largely based on the methodology from the *Hydromodification Management Plan for San Diego County*, adopted by the San Diego Water Board on July 14, 2010. As such, the San Diego Water Board supports the Copermittees' general approach outlined in the draft HMP. Specifically, the San Diego Water Board supports the foundational elements of the draft HMP including: 1) the proposed method used for evaluating the lower flow threshold that causes hydromodification impacts on local receiving waters, 2) the requirements imposed on Priority Development Projects (PDPs) in order to mitigate for those impacts, and 3) the proposed approach for PDPs that are unable to satisfy the hydromodification management requirements due to technical infeasibility.

The San Diego Water Board has the following comments on the draft HMP, and requests that the Copermittees include responses to these comments in the final version of the HMP.

1. The draft HMP does not indicate that it was reviewed by the public, nor does it describe the entities involved in its development, such as any stakeholder groups. Permit requirement F.1.h(4) requires that the Copermittees submit a draft HMP that has been reviewed by the public. Please clarify whether or not this Permit requirement has been met.

2. The draft HMP states that the numeric criteria that shall be applied to all PDPs is as follows:

   *All PDPs must use continuous simulation to ensure that post-project runoff flow rates and durations match the pre-development, naturally occurring, runoff flow rates and durations by more than 10 percent **for peak flow rates**, from 10 percent of the 2-year runoff event ($0.1Q_2$) up to the 10-year runoff event (Q_{10}).* (Emphasis added).

   Because this methodology addresses a range of flows that are predicted to be erosive (as opposed to any one "peak flow"), the San Diego Water Board requests that the text describing the numeric criteria be modified to eliminate the confusing "for peak flow rates" term.

3. The draft HMP discusses the value for the lower flow threshold ($0.1Q_2$) to be used in South Orange County as compared to other HMPs being implemented in the state. The text, however, is unclear about whether this value is strictly literature based, or if data specific to Orange County was used for its development. If the value is literature based, please describe the suitability of its use under local conditions.

4. The draft HMP does not address how a project applicant would identify pre-development, naturally occurring flow rates and durations, in cases where the pre-project condition has been altered. Please include guidance or examples of how a project applicant might meet this requirement.

5. Permit section F.1.h(1)(a) requires that a performance standard be created that ensures that the geomorphic stability within the channel not be compromised as a result of receiving runoff discharges from PDPs. Although the draft HMP states the numeric criteria that shall be applied to all PDPs, it is unclear that this numeric criteria satisfies the requirement to develop such a performance standard. The qualitative standard upheld by the draft HMP and required by the Permit should be clearly stated in the text.

6. Permit section F.1.h(1)(b) requires that, in the case of an artificially hardened channel, the lower boundary of the range of runoff flows identified shall correspond with the critical channel flow that produces the critical shear stress that initiates channel bed movement or that erodes the toe of channel banks of a comparable soft-bottom channel. The draft HMP must state that the proposed lower flow threshold ($0.1Q_2$) will satisfy this condition. Additionally, if a PDP is allowed to do a site-specific analysis and potentially raise the lower flow threshold, then the draft HMP must clarify that the PDP must adhere to this Permit requirement.

7. Draft HMP section 4.3 describes PDPs that are exempt from HMP criteria. For example, section 4.3.1 describes exemptions originating from Provision F.2.h.(3) of the Permit, to include:

   - PDPs that discharge runoff directly into underground storm drains discharging directly to bays or the ocean; and
   - PDPs that discharge runoff into conveyance channels whose bed and bank are concrete lined all the way from the point of discharge to Ocean waters, enclosed bays, estuaries, or water storage reservoirs and lakes.

   The draft HMP states that "engineered sections" or "concrete channels" are exempt. However, the text broadly defines these areas as "metal, plastic, concrete, closed conduits, engineered earthen, concrete, reinforced concrete, riprap, and articulated concrete mat." This interpretation includes construction materials well beyond the scope of the Permit language, which narrowly includes channels "…whose bed and bank are **concrete lined** all the way from the point of discharge to [the receiving waterbody]." The expanded definition in the draft HMP does not meet Permit requirements and must therefore be removed. The text describing Figure 4-3 (nodes 4 and 5) has similar language describing the exemption, stating that for a PDP to qualify, "the existing hardened or rehabilitated conveyance system must continue uninterrupted to the exempt system." The text should be changed to state that "the existing **concrete lined** system must continue uninterrupted to the exempt system" to be consistent with Permit requirements.

8. The draft HMP also includes an exemption from tidally influenced channel segments. The San Diego County HMP includes this exemption, but restricts it to lagoons. Additionally, the San Diego County HMP necessitates inclusion of an assessment by a certified biologist regarding the impacts caused by altered freshwater/saltwater balance from PDPs, and an energy dissipation system designed to mitigate the 100-year storm outlet velocity. Please include the same restrictions as the San Diego County HMP in the draft HMP or remove the exemption.

9. Draft HMP section 4.3.2 describes an exemption for infill development projects, which is similarly included in the San Diego County HMP. This exemption is permissible in San Diego County because the performance standard is "…post-project runoff flow rates and durations shall not exceed pre-project runoff flow rates and durations…" Under Order No. R9-2007-0001 (the San Diego County Municipal Storm Water Permit), there is no requirement that each project use the *pre-development* hydrology as the performance standard, only the *pre-project* hydrology. For example, a San Diego County redevelopment PDP replacing concrete with concrete may not necessarily include hydromodification management controls. In contrast, the Permit includes a requirement that PDPs

meet the pre-development performance standard, which was intentionally included as a way to improve the watershed hydrology over time via redevelopment projects. Therefore, the blanket exemption for infill development is not appropriate under the Permit requirements and must be removed from the draft HMP.

10. Draft HMP section 4.6.3 describes exemptions for in-stream flood control and restoration projects. This exemption is not explicitly allowed by the Permit, nor is it present in the San Diego County HMP. The San Diego Water Board recognizes that in order to protect public safety, the use of in-stream measures may be necessary, including the use of non-naturally occurring materials. However, it is not appropriate to provide a blanket exemption for such projects because this would discourage the project proponent from exploring more environmentally friendly options. We expect project proponents to explore all possible solutions for flood control, including solutions that would enhance creek beneficial uses, before the HMP requirements are concluded as technically infeasible. Therefore, this exemption must be removed from the draft HMP and flood control projects must be reviewed on a case-by-case basis.

11. In light of comments 7-10 above regarding draft HMP exemptions, please revisit the process associated with applicability of the draft HMP, as well as Figures 4-3, 4-4, 4-5, and 4-6 for accuracy.

12. Draft HMP section 4.4.1 describes alternative compliance options for PDPs unable to satisfy the numeric criteria due to technical infeasibility. The off-site mitigation option requires that a mitigation project be capable of treating the equivalent runoff volume that would have been treated from onsite hydromodification controls. However, the in-stream restoration option is less clear as to the minimum performance standard that would be required. If this option is to be reviewed on a case-by-case basis, then the draft HMP must indicate that the governing Copermittee is responsible for ensuring that the level of restoration is adequate given the PDP's impacts. For off-site mitigation or stream restoration, each Copermittee must require a mechanism to ensure completion of alternative compliance obligations by the project. Please describe in the draft HMP how the Copermittees will ensure that each project complete their obligations under the alternative compliance process.

13. Please clarify that all PDPs that fail to meet the numeric criteria based on on-site management controls and that do not qualify for alternative compliance (due to technical infeasibility) are required to redesign the project (i.e. project approval shall not be granted unless criteria are met).

14. Draft HMP section 4.5.4 describes requirements for municipal roadway projects. The text states that projects that are not exempt have the option to implement a "green street approach" to meet compliance in lieu of standard requirements for

both pollutant treatment and hydromodification mitigation. Please note that Permit section F.1.d applies to all streets, roads, highways, and freeways, and does not allow for deviation from standard requirements.

15. Draft HMP section 5.1 describes the process that will be required for all PDPs to ensure pre-project sediment supply. Please clarify how a project applicant would "replace" bed material supply if it is determined that land development would reduce the supply (Step 3, page 5-1).

16. Draft HMP section 5.1.2 describes the alternative compliance methodology for certain PDPs (as it relates to preserving sediment supply). Please clarify 1) how the alternative compliance methodology would function, 2) the trigger for when a project would be allowed to utilize this methodology, and 3) how this methodology would meet its goal of preservation of sediment supply.

17. Draft HMP section 6.0 describes the proposed monitoring requirements in order to assess the effectiveness of the draft HMP. Please clarify how the proposed monitoring would accomplish an "effectiveness assessment" given the monitoring locations and monitoring frequencies proposed, as well as a description of what exactly will be assessed.

18. Please explain the difference between the geomorphic surveys and cross-section surveys, as described in section 6.4.

By October 25, 2012, the Copermittees are required to submit a final HMP that incorporates the above comments (Permit section F.1.h.(4)(b)). In the interim, the San Diego Water Board encourages the Copermittees to immediately implement measures likely to be included in the HMP, in compliance with Permit requirement F.1.h.(4)(d).

The San Diego Water Board appreciates the Copermittee's efforts on the draft HMP and anticipates working with the Copermittees as needed to resolve the above-mentioned items.

In the subject line of any response, please include the requested "**In reply refer to:**" information located in the heading of this letter. For questions pertaining to the subject matter, please contact Eric Becker at (858) 492-1785 or ebecker@waterboards.ca.gov.

Respectfully,

David Barker, P.E.
Supervising Engineer
Surface Water Basins Branch

Mr. Chris Crompton April 25, 2011
Comments on Draft HMP Dated December, 2011

County of Orange - OC Public Works
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Permits: PA140072 (PA3 & PA4 Addendum)

DTB:eb:ca

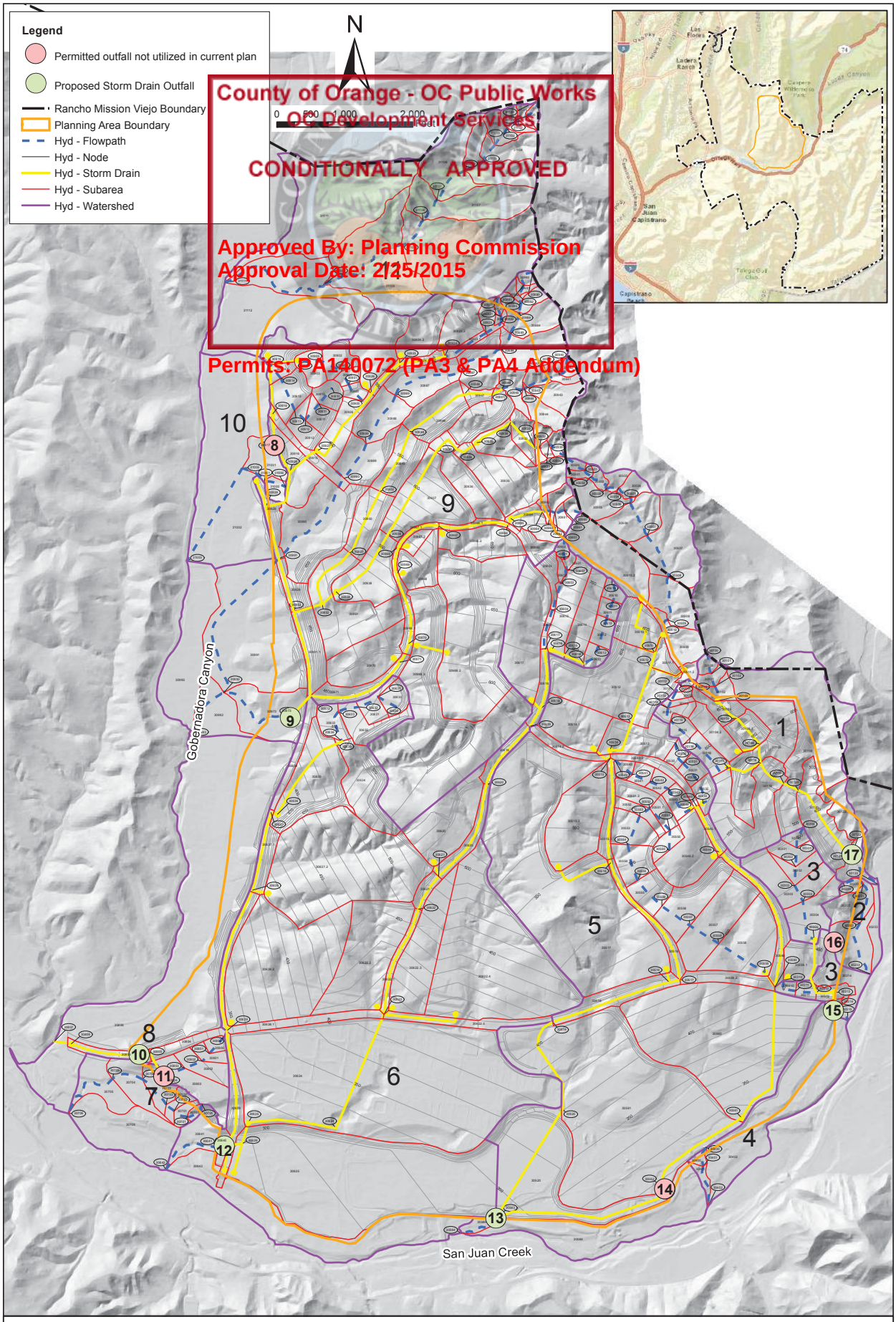
Cc via email:

Richard Boone, County of Orange
Grant Sharp, County of Orange
Jennifer Shook, County of Orange
Lisa Austin, Geosyntec Consultants
Scott Taylor, RBF Consultants
Daniel Apt, RBF Consultants

CIWQS Place ID 658018

Attachment 3: Final ROMP

Permits: PA140072 (PA3 & PA4 Addendum)



Rancho Mission Viejo
ROMP

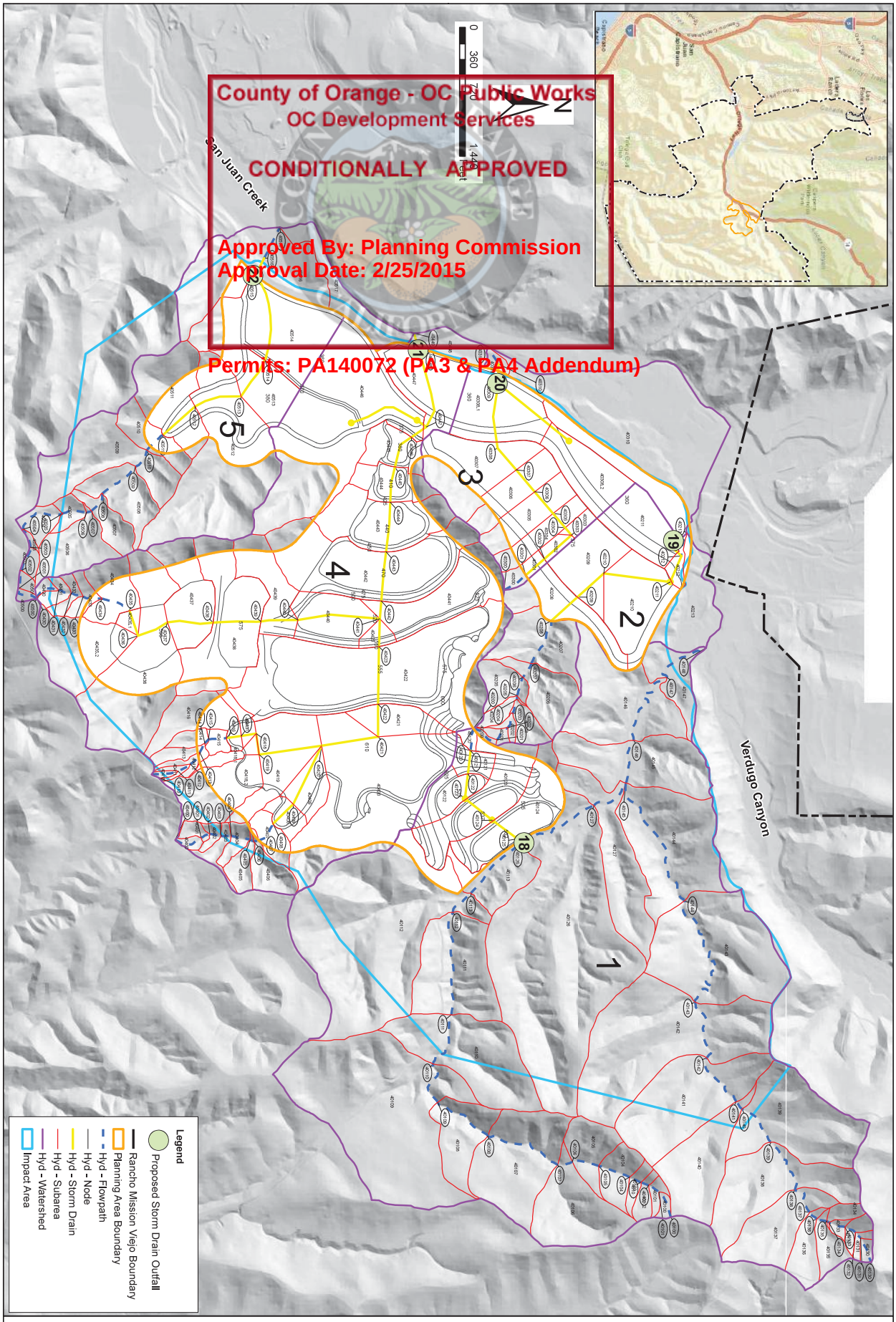
PA 3 Proposed Topography

Figure 10-6

PACE Advanced Water Engineering

HUITT-ZOLLARS

Geosyntec consultants



Rancho Mission Viejo
ROMP

PA 4 Proposed Topography

Figure 10-7

PACE Advanced Water Engineering
HUITT-ZOLLARS
Geosyntec consultants

Attachment 4: SOHM

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SOHM

Permits: PA140072 (PA3 & PA4 Addendum)

PROJECT REPORT

General Model Information

Project Name: Hydromod_a
Site Name:
Site Address:
City:
Report Date: 10/21/2014
Gage: Trabuco Canyon
Data Start: 10/01/1958
Data End: 09/30/2005
Timestep: 15 Minute
Precip Scale: 1.00
Version: 2014/09/12

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POC Thresholds

Low Flow Threshold for POC1:	10 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass: No

GroundWater: No

Pervious Land Use	Acres
B,Scrub,Mod(5-10%)	38.02
C,Scrub,VSteep(>15%)	242.03
D,Scrub,Flat(0-5%)	108.52
D,Scrub,Steep(10-15)	112.09
Pervious Total	521.26

Impervious Land Use	Acres
Impervious Total	0
Basin Total	521.26

Element Flows To:

Surface	Interflow	Groundwater

Mitigated Land Use

Basin 1

Bypass: No

GroundWater: No

Pervious Land Use	Acres
B,Scrub,Mod(5-10%)	11.72
C,Scrub,VSteep(>15%)	48.4
D,Scrub,Flat(0-5%)	21.7
D,Scrub,Steep(10-15)	22.42
Pervious Total	104.24

Impervious Land Use	Acres
Impervious,Flat(0-5)	417
Impervious Total	417
Basin Total	521.24

Element Flows To:

Surface	Interflow	Groundwater
Flow Splitter 1	Flow Splitter 1	

Routing Elements
Predeveloped Routing

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Mitigated Routing

Flow Splitter 1

Bottom Length: 10.00 ft.
Bottom Length: 10.00 ft.
Depth: 10 ft.
Side slope 1: 0 To 1
Side slope 2: 0 To 1
Side slope 3: 0 To 1
Side slope 4: 0 To 1

Threshold Splitter Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Primary(cfs)	Secondary(cfs)
0.000	0.002	0.000	120.0	0.000
0.111	0.002	0.000	120.0	0.000
0.222	0.002	0.000	120.0	0.000
0.333	0.002	0.000	120.0	0.000
0.444	0.002	0.001	120.0	0.000
0.555	0.002	0.001	120.0	0.000
0.666	0.002	0.001	120.0	0.000
0.777	0.002	0.001	120.0	0.000
0.888	0.002	0.002	120.0	0.000
1.000	0.002	0.002	120.0	0.000
1.111	0.002	0.002	120.0	0.000
1.222	0.002	0.002	120.0	0.000
1.333	0.002	0.003	120.0	0.000
1.444	0.002	0.003	120.0	0.000
1.555	0.002	0.003	120.0	0.000
1.666	0.002	0.003	120.0	0.000
1.777	0.002	0.004	120.0	0.000
1.888	0.002	0.004	120.0	0.000
2.000	0.002	0.004	120.0	0.000
2.111	0.002	0.004	120.0	0.000
2.222	0.002	0.005	120.0	0.000
2.333	0.002	0.005	120.0	0.000
2.444	0.002	0.005	120.0	0.000
2.555	0.002	0.005	120.0	0.000
2.666	0.002	0.006	120.0	0.000
2.777	0.002	0.006	120.0	0.000
2.888	0.002	0.006	120.0	1000
3.000	0.002	0.006	120.0	1000
3.111	0.002	0.007	120.0	1000
3.222	0.002	0.007	120.0	1000
3.333	0.002	0.007	120.0	1000
3.444	0.002	0.007	120.0	1000
3.555	0.002	0.008	120.0	1000
3.666	0.002	0.008	120.0	1000
3.777	0.002	0.008	120.0	1000
3.888	0.002	0.008	120.0	1000
4.000	0.002	0.009	120.0	1000
4.111	0.002	0.009	120.0	1000
4.222	0.002	0.009	120.0	1000
4.333	0.002	0.009	120.0	1000
4.444	0.002	0.010	120.0	1000
4.555	0.002	0.010	120.0	1000
4.666	0.002	0.010	120.0	1000
4.777	0.002	0.011	120.0	1000
4.888	0.002	0.011	120.0	1000

5.000	0.002	0.011	120.0	1000
5.111	0.002	0.011	120.0	1000
5.222	0.002	0.012	120.0	1000
5.333	0.002	0.012	120.0	1000
5.444	0.002	0.012	120.0	1000
5.555	0.002	0.012	120.0	1000
5.666	0.002	0.013	120.0	1000
5.777	0.002	0.013	120.0	1000
5.888	0.002	0.013	120.0	1000
6.000	0.002	0.013	120.0	1000
6.111	0.002	0.014	120.0	1000
6.222	0.002	0.014	120.0	1000
6.333	0.002	0.014	120.0	1000
6.444	0.002	0.014	120.0	1000
6.555	0.002	0.015	120.0	1000
6.666	0.002	0.015	120.0	1000
6.777	0.002	0.015	120.0	1000
6.888	0.002	0.015	120.0	1000
7.000	0.002	0.016	120.0	1000
7.111	0.002	0.016	120.0	1000
7.222	0.002	0.016	120.0	1000
7.333	0.002	0.016	120.0	1000
7.444	0.002	0.017	120.0	1000
7.555	0.002	0.017	120.0	1000
7.666	0.002	0.017	120.0	1000
7.777	0.002	0.017	120.0	1000
7.888	0.002	0.018	120.0	1000
8.000	0.002	0.018	120.0	1000
8.111	0.002	0.018	120.0	1000
8.222	0.002	0.018	120.0	1000
8.333	0.002	0.019	120.0	1000
8.444	0.002	0.019	120.0	1000
8.555	0.002	0.019	120.0	1000
8.666	0.002	0.019	120.0	1000
8.777	0.002	0.020	120.0	1000
8.888	0.002	0.020	120.0	1000
9.000	0.002	0.020	120.0	1000
9.111	0.002	0.020	120.0	1000
9.222	0.002	0.021	120.0	1000
9.333	0.002	0.021	120.0	1000
9.444	0.002	0.021	120.0	1000
9.555	0.002	0.021	120.0	1000
9.666	0.002	0.022	120.0	1000
9.777	0.002	0.022	120.0	1000
9.888	0.002	0.022	120.0	1000
10.00	0.002	0.023	120.0	1000
10.11	0.002	0.023	120.0	1000

Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:

Outlet 1	Outlet 2
Trapezoidal Pond 1	Channel 1

Trapezoidal Pond 1

Bottom Length:	500.00 ft.		
Bottom Width:	500.00 ft.		
Depth:	9 ft.		
Volume at riser head:	51.1526 acre-ft.		
Infiltration On			
Infiltration rate:	5.1		
Infiltration safety factor:	0.355		
Wetted surface area On			
Total Volume Infiltrated (ac-ft):		20031.857	
Total Volume Through Riser (ac-ft):		1970.844	
Total Volume Through Facility (ac-ft):		22002.7	
Percent Infiltrated:		91.04	
Total Precip Applied to Facility:		418.99	
Total Evap From Facility:		46.167	
Side slope 1:	3 To 1		
Side slope 2:	3 To 1		
Side slope 3:	3 To 1		
Side slope 4:	3 To 1		
Discharge Structure			
Riser Height:	8 ft.		
Riser Diameter:	200 in.		
Orifice 1 Diameter:	4 in.	Elevation:5 ft.	
Orifice 2 Diameter:	6 in.	Elevation:6 ft.	
Orifice 3 Diameter:	10 in.	Elevation:7 ft.	
Element Flows To:			
Outlet 1	Outlet 2		

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Pond Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	5.739	0.000	0.000	0.000
0.1000	5.753	0.574	0.000	10.50
0.2000	5.766	1.150	0.000	10.52
0.3000	5.780	1.728	0.000	10.55
0.4000	5.794	2.306	0.000	10.57
0.5000	5.808	2.886	0.000	10.60
0.6000	5.822	3.468	0.000	10.62
0.7000	5.836	4.051	0.000	10.65
0.8000	5.849	4.635	0.000	10.68
0.9000	5.863	5.221	0.000	10.70
1.0000	5.877	5.808	0.000	10.73
1.1000	5.891	6.396	0.000	10.75
1.2000	5.905	6.986	0.000	10.78
1.3000	5.919	7.578	0.000	10.80
1.4000	5.933	8.170	0.000	10.83
1.5000	5.947	8.764	0.000	10.85
1.6000	5.961	9.360	0.000	10.88
1.7000	5.975	9.957	0.000	10.90
1.8000	5.989	10.55	0.000	10.93
1.9000	6.003	11.15	0.000	10.96
2.0000	6.018	11.75	0.000	10.98
2.1000	6.032	12.35	0.000	11.01
2.2000	6.046	12.96	0.000	11.03
2.3000	6.060	13.56	0.000	11.06
2.4000	6.074	14.17	0.000	11.09

2.5000	6.088	14.78	0.000	11.11
2.6000	6.102	15.39	0.000	11.14
2.7000	6.117	16.00	0.000	11.16
2.8000	6.131	16.61	0.000	11.19
2.9000	6.145	17.23	0.000	11.21
3.0000	6.159	17.84	0.000	11.24
3.1000	6.174	18.46	0.000	11.27
3.2000	6.188	19.08	0.000	11.29
3.3000	6.202	19.69	0.000	11.32
3.4000	6.217	20.32	0.000	11.35
3.5000	6.231	20.94	0.000	11.37
3.6000	6.245	21.56	0.000	11.40
3.7000	6.260	22.19	0.000	11.42
3.8000	6.274	22.81	0.000	11.45
3.9000	6.289	23.44	0.000	11.48
4.0000	6.303	24.07	0.000	11.50
4.1000	6.317	24.70	0.000	11.53
4.2000	6.332	25.34	0.000	11.56
4.3000	6.346	25.97	0.000	11.58
4.4000	6.361	26.60	0.000	11.61
4.5000	6.375	27.24	0.000	11.64
4.6000	6.390	27.88	0.000	11.66
4.7000	6.404	28.52	0.000	11.69
4.8000	6.419	29.16	0.000	11.71
4.9000	6.434	29.80	0.000	11.74
5.0000	6.448	30.45	0.000	11.77
5.1000	6.463	31.09	0.132	11.79
5.2000	6.477	31.74	0.187	11.82
5.3000	6.492	32.39	0.230	11.85
5.4000	6.507	33.04	0.265	11.87
5.5000	6.521	33.69	0.297	11.90
5.6000	6.536	34.34	0.325	11.93
5.7000	6.551	35.00	0.351	11.96
5.8000	6.565	35.65	0.375	11.98
5.9000	6.580	36.31	0.398	12.01
6.0000	6.595	36.97	0.420	12.04
6.1000	6.610	37.63	0.739	12.06
6.2000	6.625	38.29	0.883	12.09
6.3000	6.639	38.95	0.997	12.12
6.4000	6.654	39.62	1.095	12.14
6.5000	6.669	40.29	1.183	12.17
6.6000	6.684	40.95	1.263	12.20
6.7000	6.699	41.62	1.339	12.23
6.8000	6.714	42.29	1.409	12.25
6.9000	6.729	42.97	1.476	12.28
7.0000	6.743	43.64	1.539	12.31
7.1000	6.758	44.31	2.431	12.33
7.2000	6.773	44.99	2.833	12.36
7.3000	6.788	45.67	3.153	12.39
7.4000	6.803	46.35	3.430	12.42
7.5000	6.818	47.03	3.679	12.44
7.6000	6.833	47.71	3.908	12.47
7.7000	6.848	48.40	4.120	12.50
7.8000	6.863	49.08	4.320	12.53
7.9000	6.878	49.77	4.510	12.55
8.0000	6.894	50.46	4.691	12.58
8.1000	6.909	51.15	9.997	12.61
8.2000	6.924	51.84	19.54	12.64

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8.3000	6.939	52.53	31.86	12.66
8.4000	6.954	53.23	46.41	12.69
8.5000	6.969	53.92	62.88	12.72
8.6000	6.984	54.62	81.08	12.75
8.7000	7.000	55.32	100.8	12.77
8.8000	7.015	56.02	122.0	12.80
8.9000	7.030	56.72	144.6	12.83
9.0000	7.045	57.43	168.5	12.86
9.1000	7.061	58.13	193.5	12.89

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Channel 1

Bottom Length: 3000.00 ft.
Bottom Width: 700.00 ft.
Manning's n: 0.075
Channel bottom slope 1: 0.128 To 1
Channel Left side slope 0: 3 To 1
Channel right side slope 2: 3 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2

Channel Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	48.20	0.000	0.000	0.000
0.1111	48.25	5.359	127.7	0.000
0.2222	48.30	10.72	405.7	0.000
0.3333	48.34	16.09	797.6	0.000
0.4444	48.39	21.46	1288.	0.000
0.5556	48.44	26.84	1869.	0.000
0.6667	48.48	32.23	2533.	0.000
0.7778	48.53	37.62	3275.	0.000
0.8889	48.58	43.01	4092.	0.000
1.0000	48.62	48.41	4981.	0.000
1.1111	48.67	53.82	5937.	0.000
1.2222	48.71	59.23	6961.	0.000
1.3333	48.76	64.65	8048.	0.000
1.4444	48.81	70.07	9198.	0.000
1.5556	48.85	75.49	10408	0.000
1.6667	48.90	80.92	11678	0.000
1.7778	48.95	86.36	13006	0.000
1.8889	48.99	91.80	14391	0.000
2.0000	49.04	97.25	15832	0.000
2.1111	49.09	102.7	17327	0.000
2.2222	49.13	108.1	18876	0.000
2.3333	49.18	113.6	20477	0.000
2.4444	49.23	119.0	22131	0.000
2.5556	49.27	124.5	23836	0.000
2.6667	49.32	130.0	25592	0.000
2.7778	49.36	135.5	27397	0.000
2.8889	49.41	141.0	29252	0.000
3.0000	49.46	146.5	31155	0.000
3.1111	49.50	152.0	33106	0.000
3.2222	49.55	157.5	35105	0.000
3.3333	49.60	163.0	37150	0.000
3.4444	49.64	168.5	39242	0.000
3.5556	49.69	174.0	41380	0.000
3.6667	49.74	179.5	43564	0.000
3.7778	49.78	185.1	45792	0.000
3.8889	49.83	190.6	48065	0.000
4.0000	49.87	196.1	50383	0.000
4.1111	49.92	201.7	52744	0.000
4.2222	49.97	207.2	55148	0.000
4.3333	50.01	212.8	57596	0.000

4.4444	50.06	218.3	60087	0.000
4.5556	50.11	223.9	62620	0.000
4.6667	50.15	229.5	65195	0.000
4.7778	50.20	235.1	67812	0.000
4.8889	50.25	240.6	70470	0.000
5.0000	50.29	246.2	73169	0.000
5.1111	50.34	251.8	75910	0.000
5.2222	50.39	257.4	78691	0.000
5.3333	50.43	263.0	81512	0.000
5.4444	50.48	268.6	84374	0.000
5.5556	50.52	274.2	87275	0.000
5.6667	50.57	279.8	90216	0.000
5.7778	50.62	285.5	93196	0.000
5.8889	50.66	291.1	96216	0.000
6.0000	50.71	296.7	99274	0.000
6.1111	50.76	302.4	102371	0.000
6.2222	50.80	308.0	10550	0.000
6.3333	50.85	313.7	10868	0.000
6.4444	50.90	319.3	11189	0.000
6.5556	50.94	325.0	11514	0.000
6.6667	50.99	330.6	11843	0.000
6.7778	51.04	336.3	12175	0.000
6.8889	51.08	342.0	12511	0.000
7.0000	51.13	347.6	12851	0.000
7.1111	51.17	353.3	13195	0.000
7.2222	51.22	359.0	13542	0.000
7.3333	51.27	364.7	13893	0.000
7.4444	51.31	370.4	14248	0.000
7.5556	51.36	376.1	14606	0.000
7.6667	51.41	381.8	14968	0.000
7.7778	51.45	387.5	15334	0.000
7.8889	51.50	393.3	15703	0.000
8.0000	51.55	399.0	16075	0.000
8.1111	51.59	404.7	16452	0.000
8.2222	51.64	410.5	16831	0.000
8.3333	51.69	416.2	17215	0.000
8.4444	51.73	421.9	17601	0.000
8.5556	51.78	427.7	17992	0.000
8.6667	51.82	433.5	18385	0.000
8.7778	51.87	439.2	18783	0.000
8.8889	51.92	445.0	19183	0.000
9.0000	51.96	450.8	19588	0.000
9.1111	52.01	456.5	19995	0.000
9.2222	52.06	462.3	20406	0.000
9.3333	52.10	468.1	20821	0.000
9.4444	52.15	473.9	21239	0.000
9.5556	52.20	479.7	21660	0.000
9.6667	52.24	485.5	22084	0.000
9.7778	52.29	491.3	22512	0.000
9.8889	52.34	497.1	22944	0.000
10.000	52.38	502.9	23378	0.000
10.111	52.43	508.8	23817	0.000

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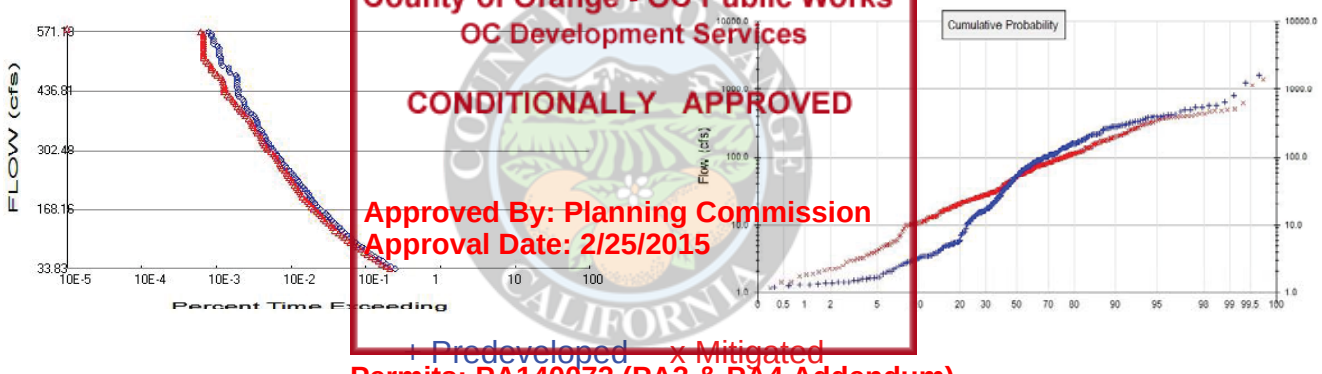
DRAFT

Analysis Results

POC 1



Permits: PA140072 (PA3 & PA4 Addendum)

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 521.26
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 104.24
Total Impervious Area: 417

Flow Frequency Method: Cunnane

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	338.347412
5 year	494.144394
10 year	571.133371
25 year	1088.667909

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	340.339874
5 year	429.540523
10 year	500.437263
25 year	958.368177

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
33.8347	4038	3456	85	Pass
39.2620	3523	3055	86	Pass
44.6893	3092	2675	86	Pass
50.1165	2760	2408	87	Pass
55.5438	2461	2166	88	Pass
60.9710	2189	1936	88	Pass
66.3983	1958	1725	88	Pass
71.8256	1773	1579	89	Pass
77.2528	1606	1419	88	Pass
82.6801	1474	1274	86	Pass
88.1073	1311	1135	86	Pass
93.5346	1197	1029	85	Pass
98.9618	1093	933	85	Pass
104.3891	1013	847	83	Pass
109.8164	933	776	83	Pass
115.2436	857	705	82	Pass
120.6709	793	642	80	Pass
126.0981	736	598	81	Pass
131.5254	679	567	83	Pass
136.9527	633	522	82	Pass
142.3799	584	478	81	Pass
147.8072	543	445	81	Pass
153.2344	507	413	81	Pass
158.6617	476	385	80	Pass
164.0890	437	359	82	Pass
169.5162	399	333	83	Pass
174.9435	376	312	82	Pass
180.3707	343	291	84	Pass
185.7980	325	275	84	Pass
191.2252	310	252	81	Pass
196.6525	297	236	79	Pass
202.0798	284	225	79	Pass
207.5070	271	215	79	Pass
212.9343	251	206	82	Pass
218.3615	240	193	80	Pass
223.7888	223	182	81	Pass
229.2161	211	172	81	Pass
234.6433	202	166	82	Pass
240.0706	188	156	82	Pass
245.4978	179	148	82	Pass
250.9251	169	144	85	Pass
256.3524	156	136	87	Pass
261.7796	144	123	85	Pass
267.2069	137	119	86	Pass
272.6341	129	115	89	Pass
278.0614	122	110	90	Pass
283.4886	115	106	92	Pass
288.9159	108	101	93	Pass
294.3432	105	95	90	Pass
299.7704	102	88	86	Pass
305.1977	95	80	84	Pass
310.6249	90	78	86	Pass
316.0522	84	73	86	Pass

321.4795	83	70	84	Pass
326.9067	77	68	88	Pass
332.3340	74	65	87	Pass
337.7612	72	64	88	Pass
343.1885	68	58	85	Pass
348.6158	66	56	84	Pass
354.0430	60	52	86	Pass
359.4703	59	49	83	Pass
364.8975	59	49	83	Pass
370.3248	57	47	82	Pass
375.7521	55	45	81	Pass
381.1793	53	40	75	Pass
386.6066	48	38	79	Pass
392.0338	44	35	79	Pass
397.4611	42	34	80	Pass
402.8883	39	31	79	Pass
408.3156	39	30	76	Pass
413.7429	38	28	73	Pass
419.1701	37	27	72	Pass
424.5974	33	25	75	Pass
430.0246	32	23	71	Pass
435.4519	32	21	65	Pass
440.8792	32	21	65	Pass
446.3064	31	21	67	Pass
451.7337	31	21	67	Pass
457.1609	31	20	64	Pass
462.5882	31	20	64	Pass
468.0155	31	19	61	Pass
473.4427	30	17	56	Pass
478.8700	25	16	64	Pass
484.2972	24	14	58	Pass
489.7245	24	14	58	Pass
495.1517	20	14	70	Pass
500.5790	19	13	68	Pass
506.0063	19	12	63	Pass
511.4335	19	11	57	Pass
516.8608	18	11	61	Pass
522.2880	18	11	61	Pass
527.7153	18	11	61	Pass
533.1426	18	11	61	Pass
538.5698	17	11	64	Pass
543.9971	15	11	73	Pass
549.4243	15	11	73	Pass
554.8516	15	11	73	Pass
560.2789	14	11	78	Pass
565.7061	14	11	78	Pass
571.1334	13	10	76	Pass

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Model Default Modifications

Total of 0 changes have been made.

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PERLND Changes

No PERLND changes have been made.

IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

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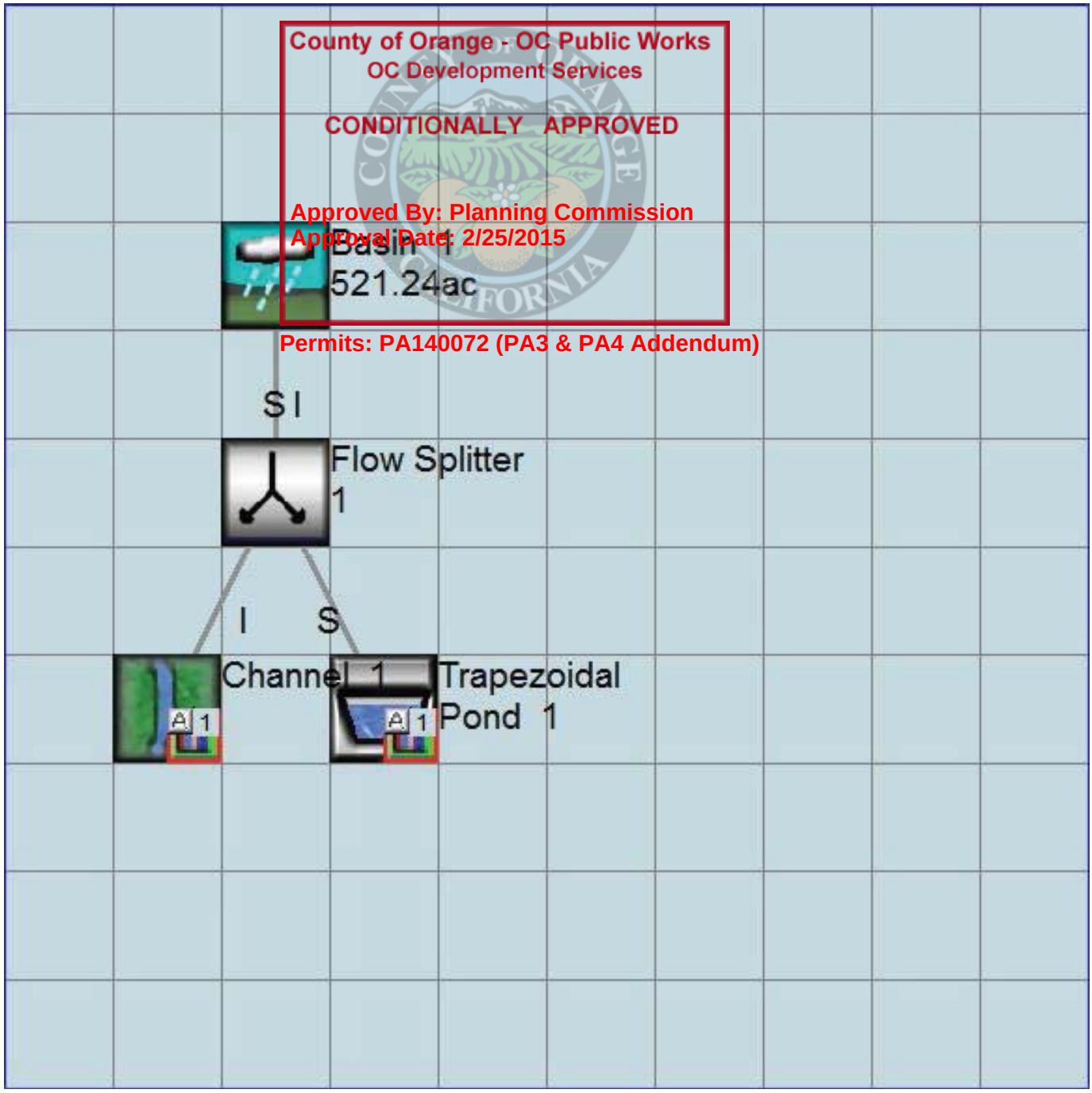
Mitigated Schematic



Predeveloped UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START         1958 10 01        END    2005 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN      1                 UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------->***
<-ID->                                                              ***
WDM        26   Hydromod_a.wdm
MESSU      25   PreHydromod_a.MES
           27   PreHydromod_a.L61
           28   PreHydromod_a.L62
           30   POCHydromod_a1.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:15
      PERLND      14
      PERLND      28
      PERLND      37
      PERLND      39
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1   PYR DIG2 FIL2 YRND
    1        Basin  1                    MAX                      1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                           User  t-series Engl Metr ***
                                           in  out            ***
   14      B,Scrub,Mod(5-10%)      1    1    1    1   27    0
   28      C,Scrub,VSteep(>15%)    1    1    1    1   27    0
   37      D,Scrub,Flat(0-5%)      1    1    1    1   27    0
   39      D,Scrub,Steep(10-15)    1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************* Active Sections *****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   14         0    0    1    0    0    0    0    0    0    0    0    0
   28         0    0    1    0    0    0    0    0    0    0    0    0
   37         0    0    1    0    0    0    0    0    0    0    0    0
```

```
 39          0     0     1     0     0     0     0     0     0     0     0     0
END ACTIVITY

PRINT-INFO
  <PLS > ****************** Print-flags ***************************** PIVL   PYR
  # -   # ATMP SNOW PWAT  SED  PST  PWG  PQAL MSTL PEST NITR PHOS TRAC  *********
 14          0     0     4     0     0     0     0     0     0     0     0     1     9
 28          0     0     4     0     0     0     0     0     0     0     0     1     9
 37          0     0     4     0     0     0     0     0     0     0     0     1     9
 39          0     0     4     0     0     0     0     0     0     0     0     1     9
END PRINT-INFO

PWAT-PARM1
  <PLS >  PWATER variable monthly parameter value flags  ***
  # -   # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
 14          0     0     0     1     0     0     0     0     1     0     0
 28          0     0     0     1     0     0     0     0     1     0     0
 37          0     0     0     1     0     0     0     0     1     0     0
 39          0     0     0     1     0     0     0     0     1     0     0
END PWAT-PARM1

PWAT-PARM2
  <PLS >       PWATER input info: Part 2          ***
  # -   # ***FOREST       LZSN     INFILT       LSUR      SLSUR      KVARY      AGWRC
 14               0        4.7      0.055        350        0.1        0.8      0.955
 28               0        3.9      0.015        250        0.2        0.8      0.955
 37               0        4.6       0.04        400       0.05        0.8      0.955
 39               0          4      0.025        300       0.15        0.8      0.955
END PWAT-PARM2

PWAT-PARM3
  <PLS >       PWATER input info: Part 3          ***
  # -   # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
 14              40        35         2         2         0      0.03         0
 28              40        35         3         2         0      0.03         0
 37              40        35         4         2         0      0.03         0
 39              40        35         4         2         0      0.03         0
END PWAT-PARM3
PWAT-PARM4
  <PLS >      PWATER input info: Part 4                                  ***
  # -   #      CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
 14               0       0.7       0.3       2.4      0.45         0
 28               0       0.3       0.3       0.4       0.3         0
 37               0       0.9       0.3         1       0.7         0
 39               0       0.5       0.3       0.6       0.4         0
END PWAT-PARM4
MON-LZETPARM
  <PLS >       PWATER input info: Part 3          ***
  # -   #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 14       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 28       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 37       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 39       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
END MON-LZETPARM
MON-INTERCEP
  <PLS >       PWATER input info: Part 3          ***
  # -   #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 14      0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
 28      0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
 37      0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
 39      0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
END MON-INTERCEP

PWAT-STATE1
  <PLS > *** Initial conditions at start of simulation
             ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
  # -   # ***  CEPS      SURS       UZS       IFWS       LZS       AGWS      GWVS
 14               0         0      0.07          0      0.94        0.3      0.01
 28               0         0      0.03          0      0.78        0.3      0.01
 37               0         0      0.09          0      0.92        0.3      0.01
```

```
   39              0         0      0.05         0       0.8       0.3      0.01
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name-------> Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                  in   out              ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI      ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX     PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK    ***
<Name>   #                  <-factor->     <Name>   #   Tbl#    ***
Basin  1***
PERLND  14                       58.62     COPY   501     12
PERLND  14                       58.62     COPY   501     13
PERLND  28                      242.03     COPY   501     12
PERLND  28                      242.03     COPY   501     13
PERLND  37                      108.52     COPY   501     12
PERLND  37                      108.52     COPY   501     13
PERLND  39                      112.09     COPY   501     12
PERLND  39                      112.09     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   48.4        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
```

```
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer             ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG        ***
                                          in   out                       ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************* Active Sections *****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************* PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                  ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *        *  *  *  *  *         ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                     ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1              PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1              IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1      48.4     WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>        <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                 <Name> # #***
  MASS-LINK        12
PERLND     PWATER SURO       0.083333      COPY            INPUT  MEAN
  END MASS-LINK    12

  MASS-LINK        13
PERLND     PWATER IFWO       0.083333      COPY            INPUT  MEAN
  END MASS-LINK    13
```

```
END MASS-LINK

END RUN
```

Permits: PA140072 (PA3 & PA4 Addendum)

Mitigated UCI File


```
RUN

GLOBAL
  WWHM4 model simulation
  START       1958 10 01        END    2005 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN      1                   UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM        26   Hydromod_a.wdm
MESSU      25   MitHydromod_a.MES
           27   MitHydromod_a.L61
           28   MitHydromod_a.L62
           30   POCHydromod_a1.dat
END FILES

OPN SEQUENCE
    INGRP              INDELT 00:15
      PERLND      14
      PERLND      28
      PERLND      37
      PERLND      39
      IMPLND       1
      RCHRES       1
      RCHRES       2
      RCHRES       3
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Trapezoidal Pond  1         MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1         1    1
  501         1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #         K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   14      B,Scrub,Mod(5-10%)       1    1    1    1   27    0
   28      C,Scrub,VSteep(>15%)     1    1    1    1   27    0
   37      D,Scrub,Flat(0-5%)       1    1    1    1   27    0
   39      D,Scrub,Steep(10-15)     1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
```

```
  <PLS > ************* Active Sections ******************************
  # -   # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
 14          0    0    1    0    0    0    0    0    0    0    0    0
 28          0    0    1    0    0    0    0    0    0    0    0    0
 37          0    0    1    0    0    0    0    0    0    0    0    0
 39          0    0    1    0    0    0    0    0    0    0    0    0
END ACTIVITY

PRINT-INFO
  <PLS > ****************** Print-flags ***************************** PIVL  PYR
  # -   # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
 14          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 28          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 37          0    0    4    0    0    0    0    0    0    0    0    0    1    9
 39          0    0    4    0    0    0    0    0    0    0    0    0    1    9
END PRINT-INFO

PWAT-PARM1
  <PLS >  PWATER variable monthly parameter value flags ***
  # -   # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
 14          0    0    0    1    0    0    0    0    1    0    0
 28          0    0    0    1    0    0    0    0    1    0    0
 37          0    0    0    1    0    0    0    0    1    0    0
 39          0    0    0    1    0    0    0    0    1    0    0
END PWAT-PARM1

PWAT-PARM2
  <PLS >      PWATER input info: Part 2         ***
  # -   # ***FOREST      LZSN    INFILT      LSUR     SLSUR      KVARY      AGWRC
 14               0       4.7     0.055       350       0.1        0.8      0.955
 28               0       3.9     0.015       250       0.2        0.8      0.955
 37               0       4.6      0.04       400      0.05        0.8      0.955
 39               0         4     0.025       300      0.15        0.8      0.955
END PWAT-PARM2

PWAT-PARM3
  <PLS >      PWATER input info: Part 3         ***
  # -   # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
 14              40        35         2         2         0      0.03         0
 28              40        35         3         2         0      0.03         0
 37              40        35         4         2         0      0.03         0
 39              40        35         4         2         0      0.03         0
END PWAT-PARM3
PWAT-PARM4
  <PLS >     PWATER input info: Part 4                              ***
  # -   #      CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
 14               0       0.7       0.3       2.4      0.45         0
 28               0       0.3       0.3       0.4       0.3         0
 37               0       0.9       0.3         1       0.7         0
 39               0       0.5       0.3       0.6       0.4         0
END PWAT-PARM4
MON-LZETPARM
  <PLS >      PWATER input info: Part 3         ***
  # -   #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 14       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 28       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 37       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
 39       0.5  0.5  0.5  0.6 0.65 0.65 0.65 0.65 0.65 0.65 0.55  0.5
END MON-LZETPARM
MON-INTERCEP
  <PLS >      PWATER input info: Part 3         ***
  # -   #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
 14      0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
 28      0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
 37      0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
 39      0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
END MON-INTERCEP

PWAT-STATE1
  <PLS > *** Initial conditions at start of simulation
```

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

DRAFT

```
             ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -   # ***   CEPS      SURS       UZS       IFWS       LZS       AGWS       GWVS
   14               0         0      0.07          0      0.94        0.3       0.01
   28               0         0      0.03          0      0.78        0.3       0.01
   37               0         0      0.09          0      0.92        0.3       0.01
   39               0         0      0.08          0       0.8        0.3       0.01
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name-------> Unit-systems   Printer ***
    # -   #                   User t-series Engl Metr ***
                                    in   out           ***
    1     Impervious,Flat(0-5)     1     1     1    27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -   # ATMP SNOW IWAT  SLD  IWG IQAL    ***
    1         0    0    1    0    0    0
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -   # ATMP SNOW IWAT  SLD  IWG IQAL     *********
    1         0    0    4    0    0    0     1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -   # CSNO RTOP  VRS  VNN RTLI     ***
    1         0    0    0    0    0
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2          ***
    # -   # ***  LSUR     SLSUR      NSUR     RETSC
    1            100      0.05       0.1       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3          ***
    # -   # ***PETMAX    PETMIN
    1              0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -   # ***  RETS      SURS
    1              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK    ***
<Name>   #                 <-factor->     <Name>   #   Tbl#    ***
Basin  1***
PERLND  14                      11.72     RCHRES   1      2
PERLND  14                      11.72     RCHRES   1      3
PERLND  28                       48.4     RCHRES   1      2
PERLND  28                       48.4     RCHRES   1      3
PERLND  37                       21.7     RCHRES   1      2
PERLND  37                       21.7     RCHRES   1      3
PERLND  39                      22.42     RCHRES   1      2
PERLND  39                      22.42     RCHRES   1      3
IMPLND   1                        417     RCHRES   1      5
```

```
******Routing******
RCHRES   1                          1     RCHRES   2       7
RCHRES   1                                COPY     1      17
RCHRES   1                          1     RCHRES   3       8
RCHRES   1                                COPY     1      18
RCHRES   2                          1     COPY   501      17
RCHRES   3                          1     COPY   501      16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult--><Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-Factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN 1 1  48.4   DISPLY   1      INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult--><Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-Factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                 ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG            ***
                                        in  out                              ***
    1     Flow Splitter  1-008    2     1    1     1    28    0    1
    2     Trapezoidal Pond-009    2     1    1     1    28    0    1
    3     Channel  1              1     1    1     1    28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************ Active Sections ******************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
    2         1    0    0    0    0    0    0    0    0    0
    3         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
    2         4    0    0    0    0    0    0    0    0    0    1    9
    3         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                   ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
    1        0  1  0  0    4  5  0  0  0       0  0  0  0  0        2  2  2  2  2
    2        0  1  0  0    4  5  0  0  0       0  0  0  0  0        2  2  2  2  2
    3        0  1  0  0    4  0  0  0  0       0  0  0  0  0        2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN      DELTH     STCOR        KS       DB50       ***
  <------><--------><--------><--------><--------><--------><--------->       ***
    1              1      0.01       0.0       0.0       0.5       0.0
    2              2      0.09       0.0       0.0       0.5       0.0
    3              3      0.57       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                      ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
```

```
    1             0         4.0   0.0   0.0   0.0   0.0        0.0   0.0   0.0   0.0   0.0
    2             0         4.0   5.0   0.0   0.0   0.0        0.0   0.0   0.0   0.0   0.0
    3             0         4.0   0.0   0.0   0.0   0.0        0.0   0.0   0.0   0.0   0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
  FTABLE      1
   90    5
     Depth      Area     Volume  Outflow1  Outflow2  Velocity  Travel Time***
      (ft)   (acres) (acre-ft)    (cfs)     (cfs)    (ft/sec)    (Minutes)***
  0.000000  0.002296  0.000000  120.0000  0.000000
  0.111111  0.002296  0.000255  120.0000  0.000000
  0.222222  0.002296  0.000510  120.0000  0.000000
  0.333333  0.002296  0.000765  120.0000  0.000000
  0.444444  0.002296  0.001020  120.0000  0.000000
  0.555556  0.002296  0.001275  120.0000  0.000000
  0.666667  0.002296  0.001530  120.0000  11.00000
  0.777778  0.002296  0.001786  120.0000  21.00000
  0.888889  0.002296  0.002041  120.0000  31.00000
  1.000000  0.002296  0.002296  120.0000  41.00000
  1.111111  0.002296  0.002551  120.0000  51.00000
  1.222222  0.002296  0.002806  120.0000  61.00000
  1.333333  0.002296  0.003061  120.0000  71.00000
  1.444444  0.002296  0.003316  120.0000  81.00000
  1.555556  0.002296  0.003571  120.0000  91.00000
  1.666667  0.002296  0.003826  120.0000  101.0000
  1.777778  0.002296  0.004081  120.0000  111.0000
  1.888889  0.002296  0.004336  120.0000  121.0000
  2.000000  0.002296  0.004591  120.0000  131.0000
  2.111111  0.002296  0.004846  120.0000  141.0000
  2.222222  0.002296  0.005102  120.0000  151.0000
  2.333333  0.002296  0.005357  120.0000  161.0000
  2.444444  0.002296  0.005612  120.0000  171.0000
  2.555556  0.002296  0.005867  120.0000  181.0000
  2.666667  0.002296  0.006122  120.0000  191.0000
  2.777778  0.002296  0.006377  120.0000  201.0000
  2.888889  0.002296  0.006632  120.0000  211.0000
  3.000000  0.002296  0.006887  120.0000  221.0000
  3.111111  0.002296  0.007142  120.0000  231.0000
  3.222222  0.002296  0.007397  120.0000  241.0000
  3.333333  0.002296  0.007652  120.0000  251.0000
  3.444444  0.002296  0.007907  120.0000  261.0000
  3.555556  0.002296  0.008162  120.0000  271.0000
  3.666667  0.002296  0.008418  120.0000  281.0000
  3.777778  0.002296  0.008673  120.0000  291.0000
  3.888889  0.002296  0.008928  120.0000  301.0000
  4.000000  0.002296  0.009183  120.0000  311.0000
  4.111111  0.002296  0.009438  120.0000  321.0000
  4.222222  0.002296  0.009693  120.0000  331.0000
  4.333333  0.002296  0.009948  120.0000  341.0000
  4.444444  0.002296  0.010203  120.0000  351.0000
  4.555556  0.002296  0.010458  120.0000  361.0000
  4.666667  0.002296  0.010713  120.0000  371.0000
  4.777778  0.002296  0.010968  120.0000  381.0000
  4.888889  0.002296  0.011223  120.0000  391.0000
  5.000000  0.002296  0.011478  120.0000  401.0000
  5.111111  0.002296  0.011733  120.0000  411.0000
  5.222222  0.002296  0.011989  120.0000  421.0000
  5.333333  0.002296  0.012244  120.0000  431.0000
  5.444444  0.002296  0.012499  120.0000  441.0000
  5.555556  0.002296  0.012754  120.0000  451.0000
  5.666667  0.002296  0.013009  120.0000  461.0000
  5.777778  0.002296  0.013264  120.0000  471.0000
  5.888889  0.002296  0.013519  120.0000  481.0000
  6.000000  0.002296  0.013774  120.0000  491.0000
  6.111111  0.002296  0.014029  120.0000  501.0000
  6.222222  0.002296  0.014284  120.0000  511.0000
```

6.333333	0.002296	0.014539	120.0000	521.0000
6.444444	0.002296	0.014794	120.0000	531.0000
6.555556	0.002296	0.015049	120.0000	541.0000
6.666667	0.002296	0.015305	120.0000	551.0000
6.777778	0.002296	0.015560	120.0000	561.0000
6.888889	0.002296	0.015815	120.0000	571.0000
7.000000	0.002296	0.016070	120.0000	581.0000
7.111111	0.002296	0.016325	120.0000	591.0000
7.222222	0.002296	0.016580	120.0000	601.0000
7.333333	0.002296	0.016835	120.0000	611.0000
7.444444	0.002296	0.017090	120.0000	621.0000
7.555556	0.002296	0.017345	120.0000	631.0000
7.666667	0.002296	0.017600	120.0000	641.0000
7.777778	0.002296	0.017855	120.0000	651.0000
7.888889	0.002296	0.018110	120.0000	661.0000
8.000000	0.002296	0.018365	120.0000	671.0000
8.111111	0.002296	0.018621	120.0000	681.0000
8.222222	0.002296	0.018876	120.0000	691.0000
8.333333	0.002296	0.019131	120.0000	701.0000
8.444444	0.002296	0.019386	120.0000	711.0000
8.555556	0.002296	0.019641	120.0000	721.0000
8.666667	0.002296	0.019896	120.0000	731.0000
8.777778	0.002296	0.020151	120.0000	741.0000
8.888889	0.002296	0.020406	120.0000	751.0000
9.000000	0.002296	0.020661	120.0000	761.0000
9.111111	0.002296	0.020916	120.0000	771.0000
9.222222	0.002296	0.021171	120.0000	781.0000
9.333333	0.002296	0.021426	120.0000	791.0000
9.444444	0.002296	0.021681	120.0000	801.0000
9.555556	0.002296	0.021937	120.0000	811.0000
9.666667	0.002296	0.022192	120.0000	821.0000
9.777778	0.002296	0.022447	120.0000	831.0000
9.888889	0.002296	0.022702	120.0000	841.0000

END FTABLE 1
FTABLE 2
91 5

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Outflow2 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	5.739210	0.000000	0.000000	0.000000		
0.100000	5.752993	0.574610	0.000000	10.50259		
0.200000	5.766792	1.150599	0.000000	10.52778		
0.300000	5.780607	1.727969	0.000000	10.55300		
0.400000	5.794439	2.306722	0.000000	10.57826		
0.500000	5.808287	2.886858	0.000000	10.60354		
0.600000	5.822152	3.468380	0.000000	10.62885		
0.700000	5.836034	4.051289	0.000000	10.65419		
0.800000	5.849932	4.635588	0.000000	10.67956		
0.900000	5.863847	5.221276	0.000000	10.70497		
1.000000	5.877778	5.808358	0.000000	10.73040		
1.100000	5.891725	6.396833	0.000000	10.75586		
1.200000	5.905690	6.986704	0.000000	10.78135		
1.300000	5.919670	7.577972	0.000000	10.80688		
1.400000	5.933668	8.170638	0.000000	10.83243		
1.500000	5.947681	8.764706	0.000000	10.85801		
1.600000	5.961712	9.360176	0.000000	10.88363		
1.700000	5.975758	9.957049	0.000000	10.90927		
1.800000	5.989822	10.55533	0.000000	10.93494		
1.900000	6.003902	11.15501	0.000000	10.96065		
2.000000	6.017998	11.75611	0.000000	10.98638		
2.100000	6.032111	12.35861	0.000000	11.01215		
2.200000	6.046241	12.96253	0.000000	11.03794		
2.300000	6.060387	13.56786	0.000000	11.06377		
2.400000	6.074549	14.17461	0.000000	11.08962		
2.500000	6.088728	14.78277	0.000000	11.11551		
2.600000	6.102924	15.39236	0.000000	11.14142		
2.700000	6.117136	16.00336	0.000000	11.16737		
2.800000	6.131365	16.61578	0.000000	11.19334		
2.900000	6.145610	17.22963	0.000000	11.21935		
3.000000	6.159871	17.84491	0.000000	11.24538		
3.100000	6.174150	18.46161	0.000000	11.27145		

3.200000	6.188444	19.07974	0.000000	11.29755
3.300000	6.202756	19.69930	0.000000	11.32367
3.400000	6.217084	20.32029	0.000000	11.34983
3.500000	6.231428	20.94272	0.000000	11.37602
3.600000	6.245789	21.56658	0.000000	11.40223
3.700000	6.260166	22.19187	0.000000	11.42848
3.800000	6.274560	22.81861	0.000000	11.45476
3.900000	6.288971	23.44678	0.000000	11.48107
4.000000	6.303398	24.07641	0.000000	11.50740
4.100000	6.317841	24.70747	0.000000	11.53377
4.200000	6.332301	25.33997	0.000000	11.56017
4.300000	6.346778	25.97393	0.000000	11.58660
4.400000	6.361271	26.60933	0.000000	11.61306
4.500000	6.375781	27.24618	0.000000	11.63955
4.600000	6.390307	27.88449	0.000000	11.66606
4.700000	6.404849	28.52425	0.000000	11.69261
4.800000	6.419409	29.16546	0.000000	11.71919
4.900000	6.433984	29.80813	0.000000	11.74580
5.000000	6.448577	30.45226	0.000000	11.77244
5.100000	6.463185	31.09784	0.132886	11.79911
5.200000	6.477811	31.74489	0.187929	11.82581
5.300000	6.492453	32.39341	0.230165	11.85254
5.400000	6.507111	33.04339	0.265772	11.87930
5.500000	6.521786	33.69483	0.297142	11.90609
5.600000	6.536478	34.34774	0.325503	11.93291
5.700000	6.551185	35.00213	0.351583	11.95976
5.800000	6.565910	35.65798	0.375858	11.98664
5.900000	6.580651	36.31531	0.398658	12.01355
6.000000	6.595409	36.97411	0.420222	12.04050
6.100000	6.610183	37.63439	0.739726	12.06747
6.200000	6.624973	38.29615	0.883171	12.09447
6.300000	6.639781	38.95939	0.996999	12.12150
6.400000	6.654604	39.62411	1.095200	12.14856
6.500000	6.669444	40.29031	1.183234	12.17565
6.600000	6.684301	40.95800	1.263925	12.20278
6.700000	6.699174	41.62717	1.338965	12.22993
6.800000	6.714064	42.29783	1.409468	12.25711
6.900000	6.728971	42.96998	1.476216	12.28432
7.000000	6.743893	43.64363	1.539784	12.31157
7.100000	6.758833	44.31876	2.431146	12.33884
7.200000	6.773789	44.99540	2.833590	12.36614
7.300000	6.788761	45.67352	3.153867	12.39348
7.400000	6.803750	46.35315	3.430810	12.42084
7.500000	6.818756	47.03427	3.679563	12.44824
7.600000	6.833778	47.71690	3.907953	12.47566
7.700000	6.848816	48.40103	4.120671	12.50311
7.800000	6.863871	49.08666	4.320801	12.53060
7.900000	6.878943	49.77380	4.510506	12.55811
8.000000	6.894031	50.46245	4.691374	12.58566
8.100000	6.909136	51.15261	9.997521	12.61323
8.200000	6.924257	51.84428	19.54923	12.64084
8.300000	6.939395	52.53746	31.86319	12.66847
8.400000	6.954549	53.23216	46.41043	12.69614
8.500000	6.969720	53.92837	62.88539	12.72383
8.600000	6.984907	54.62611	81.08201	12.75156
8.700000	7.000111	55.32536	100.8490	12.77932
8.800000	7.015331	56.02613	122.0693	12.80710
8.900000	7.030568	56.72842	144.6486	12.83492
9.000000	7.045822	57.43224	168.5090	12.86276

END FTABLE 2
FTABLE 3
91 4

Depth (ft)	Area (acres)	Volume (acre-ft)	Outflow1 (cfs)	Velocity (ft/sec)	Travel Time*** (Minutes)***
0.000000	48.20937	0.000000	0.000000		
0.111111	48.25574	5.359172	127.7844		
0.222222	48.30211	10.72350	405.7409		
0.333333	48.34848	16.09297	797.6063		
0.444444	48.39486	21.46760	1288.470		
0.555556	48.44123	26.84739	1869.156		

0.666667	48.48761	32.23232	2533.197
0.777778	48.53398	37.62241	3275.683
0.888889	48.58036	43.01765	4092.701
1.000000	48.62674	48.41805	4981.032
1.111111	48.67312	53.82359	5937.957
1.222222	48.71950	59.23430	6961.25
1.333333	48.76588	64.65015	8048.530
1.444444	48.81226	70.07116	9198.330
1.555556	48.85864	75.49732	10408.92
1.666667	48.90503	80.92863	11678.86
1.777778	48.95141	86.36510	13006.81
1.888889	48.99780	91.80672	14391.58
2.000000	49.04418	97.25350	15832.08
2.111111	49.09057	102.7054	17324.22
2.222222	49.13696	108.1625	18876.11
2.333333	49.18334	113.6248	20477.86
2.444444	49.22973	119.0921	22131.64
2.555556	49.27612	124.5647	23836.67
2.666667	49.32252	130.0424	25592.23
2.777778	49.36891	135.5253	27397.64
2.888889	49.41530	141.0133	29252.24
3.000000	49.46169	146.5064	31155.43
3.111111	49.50809	152.0048	33106.63
3.222222	49.55449	157.5082	35105.28
3.333333	49.60088	163.0169	37150.85
3.444444	49.64728	168.5306	39242.85
3.555556	49.69368	174.0496	41380.80
3.666667	49.74008	179.5737	43564.23
3.777778	49.78648	185.1029	45792.72
3.888889	49.83288	190.6373	48065.84
4.000000	49.87928	196.1769	50383.18
4.111111	49.92568	201.7216	52744.36
4.222222	49.97208	207.2715	55149.00
4.333333	50.01849	212.8265	57596.75
4.444444	50.06489	218.3867	60087.25
4.555556	50.11130	223.9521	62620.18
4.666667	50.15771	229.5226	65195.21
4.777778	50.20411	235.0982	67812.02
4.888889	50.25052	240.6790	70470.32
5.000000	50.29693	246.2650	73169.81
5.111111	50.34334	251.8561	75910.21
5.222222	50.38975	257.4524	78691.25
5.333333	50.43617	263.0539	81512.65
5.444444	50.48258	268.6605	84374.16
5.555556	50.52899	274.2722	87275.54
5.666667	50.57541	279.8891	90216.53
5.777778	50.62182	285.5112	93196.89
5.888889	50.66824	291.1384	96216.41
6.000000	50.71466	296.7708	99274.85
6.111111	50.76108	302.4083	102372.0
6.222222	50.80750	308.0510	105507.6
6.333333	50.85392	313.6989	108681.6
6.444444	50.90034	319.3519	111893.6
6.555556	50.94676	325.0101	115143.5
6.666667	50.99318	330.6734	118431.0
6.777778	51.03960	336.3419	121756.1
6.888889	51.08603	342.0155	125118.6
7.000000	51.13245	347.6944	128518.1
7.111111	51.17888	353.3783	131954.7
7.222222	51.22531	359.0674	135428.0
7.333333	51.27173	364.7617	138938.0
7.444444	51.31816	370.4612	142484.4
7.555556	51.36459	376.1658	146067.2
7.666667	51.41102	381.8755	149686.1
7.777778	51.45745	387.5904	153341.0
7.888889	51.50389	393.3105	157031.8
8.000000	51.55032	399.0357	160758.2
8.111111	51.59675	404.7661	164520.3
8.222222	51.64319	410.5017	168317.7
8.333333	51.68962	416.2424	172150.5

```
  8.444444  51.73606  421.9883  176018.4
  8.555556  51.78250  427.7393  179921.3
  8.666667  51.82894  433.4955  183859.0
  8.777778  51.87537  439.2568  187831.6
  8.888889  51.92181  445.0233  191838.8
  9.000000  51.96826  450.7950  195880.7
  9.111111  52.01470  456.5718  199956.6
  9.222222  52.06114  462.3538  204066.9
  9.333333  52.10758  468.1410  208211.4
  9.444444  52.15403  473.9333  212390.0
  9.555556  52.20047  479.7308  216602.5
  9.666667  52.24692  485.5334  220848.8
  9.777778  52.29337  491.3412  225128.8
  9.888889  52.33981  497.1542  229442.5
  10.00000  52.38626  502.9723  233789.6
  END FTABLE  3
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1              PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1              IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM      2 PREC     ENGL    1              RCHRES   2     EXTNL  PREC
WDM      1 EVAP     ENGL    1              RCHRES   2     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   2 HYDR   RO     1 1        1      WDM   1000 FLOW     ENGL       REPL
RCHRES   2 HYDR   O      1 1        1      WDM   1001 FLOW     ENGL       REPL
RCHRES   2 HYDR   O      2 1        1      WDM   1002 FLOW     ENGL       REPL
RCHRES   2 HYDR   STAGE  1 1        1      WDM   1003 STAG     ENGL       REPL
COPY     1 OUTPUT MEAN   1 1     48.4      WDM    701 FLOW     ENGL       REPL
COPY   501 OUTPUT MEAN   1 1     48.4      WDM    801 FLOW     ENGL       REPL
RCHRES   3 HYDR   RO     1 1        1      WDM   1004 FLOW     ENGL       REPL
RCHRES   3 HYDR   STAGE  1 1        1      WDM   1005 STAG     ENGL       REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK        7
RCHRES     OFLOW  OVOL   1                 RCHRES         INFLOW IVOL
  END MASS-LINK    7

  MASS-LINK        8
RCHRES     OFLOW  OVOL   2                 RCHRES         INFLOW IVOL
  END MASS-LINK    8

  MASS-LINK       16
RCHRES     ROFLOW                         COPY           INPUT  MEAN
  END MASS-LINK   16
```

County of Orange : OC Public Works
OC Development Services
CONDITIONALLY APPROVED
Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

```
  MASS-LINK        17
RCHRES     OFLOW  OVOL   1                  COPY           INPUT   MEAN
  END MASS-LINK    17

  MASS-LINK        18
RCHRES     OFLOW  OVOL   2                  COPY           INPUT   MEAN
  END MASS-LINK    18


END MASS-LINK

END RUN
```

Permits: PA140072 (PA3 & PA4 Addendum)

Permits: PA140072 (PA3 & PA4 Addendum)

ERROR/WARNING ID: 341 6

DATE/TIME: 1967/12/18 12:30

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	977.79	988.90	1071.4

ERROR/WARNING ID: 341 5

DATE/TIME: 1967/12/18 12:30

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-1.686E+03	8.4303	8.4303	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1969/ 2/ 6 6:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	977.79	988.90	1143.9

ERROR/WARNING ID: 341 5

DATE/TIME: 1969/ 2/ 6 6:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-2.992E+03	14.956	1.4956E+01	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1978/ 3/ 4 14:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	9.7779E+02	988.90	3966.5

ERROR/WARNING ID: 341 5

DATE/TIME: 1978/ 3/ 4 14:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-5.382E+04	269.06	269.06	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1980/ 1/30 11:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	977.79	988.90	1128.6

ERROR/WARNING ID: 341 5

DATE/TIME: 1980/ 1/30 11:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-2.716E+03	13.577	1.3577E+01	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1980/ 1/30 11:30

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	9.7779E+02	988.90	1332.4

ERROR/WARNING ID: 341 5

DATE/TIME: 1980/ 1/30 11:30

RCHRES: 1

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0). Probably ftable was extrapolated. If extrapolation was small, no problem. Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT	
0.0000E+00	200.03	-6.385E+03	31.920	3.1920E+01		2

ERROR/WARNING ID: 341 6

DATE/TIME: 1980/ 1/30 16:45

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value in the "volume" column of the last row of RCHTAB(). To continue the simulation the table has been extrapolated, based on information contained in the last two rows. This will usually result in some loss of accuracy. If depth is being calculated it will also cause an error condition. Relevant data are:

NROWS	V1	V2	VOL
90	9.7779E+02	988.90	1916.0

ERROR/WARNING ID: 341 5

DATE/TIME: 1980/ 1/30 16:45

RCHRES: 1

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0). Probably ftable was extrapolated. If extrapolation was small, no problem. Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-1.690E+04	84.466	84.466	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1980/ 1/30 18: 0

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value in the "volume" column of the last row of RCHTAB(). To continue the simulation the table has been extrapolated, based on information contained in the last two rows. This will usually result in some loss of accuracy. If depth is being calculated it will also cause an error condition. Relevant data are:

NROWS	V1	V2	VOL
90	977.79	988.90	1211.0

ERROR/WARNING ID: 341 5

DATE/TIME: 1980/ 1/30 18: 0

RCHRES: 1

Calculation of relative depth, using Newton's method of successive approximations, converged to an invalid value (not in range 0.0 to 1.0).

Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-4.200E+03	20.999	20.999	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1980/ 2/15 5:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	977.79	988.90	1066.8

ERROR/WARNING ID: 341 5

DATE/TIME: 1980/ 2/15 5:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-1.604E+03	8.0170	8.0170	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1982/ 3/17 7:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	977.79	988.90	1036.4

ERROR/WARNING ID: 341 5

DATE/TIME: 1982/ 3/17 7:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-1.056E+03	5.2792	5.2792E+00	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1983/ 2/27 13:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	9.7779E+02	988.90	1102.6

ERROR/WARNING ID: 341 5

DATE/TIME: 1983/ 2/27 13:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-2.247E+03	11.235	1.1235E+01	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1992/ 2/12 14:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	9.7779E+02	988.90	1376.4

ERROR/WARNING ID: 341 5

DATE/TIME: 1992/ 2/12 14:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-7.178E+03	35.884	3.5884E+01	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1992/ 2/15 11:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

```
NROWS          V1          V2          VOL
90 9.7779E+02   988.90      1208.3
```

```
ERROR/WARNING ID:    341    5

DATE/TIME: 1992/ 2/15 11:15

RCHRES:      1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A           B           C       RDEP1       RDEP2   COUNT
0.0000E+00   200.03     -4.151E+03    20.753      20.753         2
```

```
ERROR/WARNING ID:    341    6

DATE/TIME: 1995/ 1/10 15:15

RCHRES:      1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS          V1          V2          VOL
90   977.79      988.90      1004.7
```

```
ERROR/WARNING ID:    341    5

DATE/TIME: 1995/ 1/10 15:15

RCHRES:      1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated.  If extrapolation was small, no problem.
Remedy; extend ftable.  Relevant data are:

A           B           C       RDEP1       RDEP2   COUNT
0.0000E+00   200.03     -484.86       2.4240   2.4240E+00       2
```

```
ERROR/WARNING ID:    341    6

DATE/TIME: 1995/ 2/13 13:45

RCHRES:      1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB().  To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows.  This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS          V1          V2          VOL
90 9.7779E+02   988.90      998.58
```

```
ERROR/WARNING ID:    341    5

DATE/TIME: 1995/ 2/13 13:45

RCHRES:      1
```

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-374.31	1.8713	1.8713	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1997/ 9/25 23:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	977.79	988.90	1528.6

ERROR/WARNING ID: 341 5

DATE/TIME: 1997/ 9/25 23:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-9.919E+03	49.587	49.587	2

ERROR/WARNING ID: 341 6

DATE/TIME: 1998/ 2/ 7 23:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	977.79	988.90	1269.2

ERROR/WARNING ID: 341 5

DATE/TIME: 1998/ 2/ 7 23:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-5.248E+03	26.238	2.6238E+01	2

ERROR/WARNING ID: 341 6

DATE/TIME: 2000/ 2/21 14:15

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	9.7779E+02	988.90	1219.5

ERROR/WARNING ID: 341 5

DATE/TIME: 2000/ 2/21 14:15

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-4.352E+03	21.758	2.1758E+01	2

ERROR/WARNING ID: 341 6

DATE/TIME: 2003/ 2/25 7: 0

RCHRES: 1

The volume of water in this reach/mixed reservoir is greater than the value
in the "volume" column of the last row of RCHTAB(). To continue the
simulation the table has been extrapolated, based on information contained
in the last two rows. This will usually result in some loss of accuracy.
If depth is being calculated it will also cause an error condition.
Relevant data are:

NROWS	V1	V2	VOL
90	9.7779E+02	988.90	1042.7

ERROR/WARNING ID: 341 5

DATE/TIME: 2003/ 2/25 7: 0

RCHRES: 1

Calculation of relative depth, using Newton's method of successive
approximations, converged to an invalid value (not in range 0.0 to 1.0).
Probably ftable was extrapolated. If extrapolation was small, no problem.
Remedy; extend ftable. Relevant data are:

A	B	C	RDEP1	RDEP2	COUNT
0.0000E+00	200.03	-1.169E+03	5.8452	5.8452E+00	2

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PROJECT REPORT

General Model Information

Project Name: DA3Hydromod
Site Name:
Site Address:
City:
Report Date: 10/21/2014
Gage: Trabuco Canyon
Data Start: 10/01/1958
Data End: 09/30/2005
Timestep: 15 Minute
Precip Scale: 1.00
Version: 2014/09/12

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POC Thresholds

Low Flow Threshold for POC1:	10 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

Landuse Basin Data

Predeveloped Land Use

Existing Condition

Bypass: No

GroundWater: No

Pervious Land Use	Acres
A,Scrub,Mod(5-10%)	0.28
B,Scrub,Mod(5-10%)	54.86
C,Scrub,Steep(10-15)	148.69
D,Scrub,Steep(10-15)	48.3
Pervious Total	252.13

Impervious Land Use	Acres
Impervious Total	0
Basin Total	252.13

Element Flows To:
Surface Interflow Groundwater

Mitigated Land Use

Proposed Condition

Bypass: No

GroundWater: No

Pervious Land Use	Acres
A,Scrub,Mod(5-10%)	0.056
B,Scrub,Mod(5-10%)	10.97
C,Scrub,Steep(10-15)	29.74
D,Scrub,Steep(10-15)	9.66
Pervious Total	50.426

Impervious Land Use	Acres
Impervious,Flat(0-5)	201.704
Impervious Total	201.704
Basin Total	252.13

Element Flows To:

Surface	Interflow	Groundwater
Extended Detention for D3	Extended Detention for D3	

Routing Elements
Predeveloped Routing

County of Orange - OC Public Works
OC Development Services

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Mitigated Routing

Extended Detention for D3

Bottom Length: 559.65 ft.
Bottom Width: 559.65 ft.
Depth: 8 ft.
Volume at riser head: 22.4423 acre-ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 96 in.
Notch Type: Rectangular
Notch Width: 8.000 ft.
Notch Height: 0.062 ft.
Orifice 1 Diameter: 16.35995 in. Elevation:0 ft.
Element Flows To:
Outlet 1 Outlet 2

Pond Hydraulic Table

Stage(ft)	Area(ac)	Volume(ac-ft)	Discharge(cfs)	Infilt(cfs)
0.0000	7.190	0.000	0.000	0.000
0.0889	7.204	0.639	2.095	0.000
0.1778	7.217	1.280	2.963	0.000
0.2667	7.231	1.922	3.630	0.000
0.3556	7.245	2.566	4.191	0.000
0.4444	7.259	3.210	4.686	0.000
0.5333	7.272	3.856	5.133	0.000
0.6222	7.286	4.503	5.544	0.000
0.7111	7.300	5.152	5.927	0.000
0.8000	7.314	5.801	6.287	0.000
0.8889	7.328	6.452	6.627	0.000
0.9778	7.341	7.104	6.950	0.000
1.0667	7.355	7.757	7.260	0.000
1.1556	7.369	8.412	7.556	0.000
1.2444	7.383	9.067	7.841	0.000
1.3333	7.397	9.724	8.116	0.000
1.4222	7.411	10.38	8.383	0.000
1.5111	7.425	11.04	8.641	0.000
1.6000	7.439	11.70	8.891	0.000
1.6889	7.453	12.36	9.135	0.000
1.7778	7.467	13.02	9.372	0.000
1.8667	7.481	13.69	9.604	0.000
1.9556	7.494	14.35	9.830	0.000
2.0444	7.508	15.02	10.05	0.000
2.1333	7.523	15.69	10.26	0.000
2.2222	7.537	16.36	10.47	0.000
2.3111	7.551	17.03	10.68	0.000
2.4000	7.565	17.70	10.89	0.000
2.4889	7.579	18.37	11.09	0.000
2.5778	7.593	19.05	11.28	0.000
2.6667	7.607	19.72	11.47	0.000
2.7556	7.621	20.40	11.66	0.000

2.8444	7.635	21.08	11.85	0.000
2.9333	7.649	21.76	12.03	0.000
3.0222	7.663	22.44	12.89	0.000
3.1111	7.677	23.12	15.69	0.000
3.2000	7.692	23.80	19.95	0.000
3.2889	7.706	24.49	25.25	0.000
3.3778	7.720	25.17	31.42	0.000
3.4667	7.734	25.86	38.33	0.000
3.5556	7.748	26.55	45.92	0.000
3.6444	7.763	27.24	54.13	0.000
3.7333	7.777	27.93	62.92	0.000
3.8222	7.791	28.62	72.24	0.000
3.9111	7.805	29.31	82.07	0.000
4.0000	7.820	30.01	92.38	0.000
4.0889	7.834	30.70	103.1	0.000
4.1778	7.848	31.40	114.3	0.000
4.2667	7.863	32.10	126.0	0.000
4.3556	7.877	32.80	138.0	0.000
4.4444	7.891	33.50	150.4	0.000
4.5333	7.906	34.20	163.3	0.000
4.6222	7.920	34.90	176.5	0.000
4.7111	7.935	35.61	190.0	0.000
4.8000	7.949	36.32	203.9	0.000
4.8889	7.963	37.02	218.2	0.000
4.9778	7.978	37.73	232.8	0.000
5.0667	7.992	38.44	247.7	0.000
5.1556	8.007	39.15	262.9	0.000
5.2444	8.021	39.86	278.4	0.000
5.3333	8.036	40.58	294.3	0.000
5.4222	8.050	41.29	310.4	0.000
5.5111	8.065	42.01	326.9	0.000
5.6000	8.079	42.73	343.6	0.000
5.6889	8.094	43.45	360.7	0.000
5.7778	8.108	44.17	378.0	0.000
5.8667	8.123	44.89	395.5	0.000
5.9556	8.137	45.61	413.4	0.000
6.0444	8.152	46.33	431.5	0.000
6.1333	8.167	47.06	449.9	0.000
6.2222	8.181	47.79	468.5	0.000
6.3111	8.196	48.51	487.4	0.000
6.4000	8.210	49.24	506.6	0.000
6.4889	8.225	49.97	526.0	0.000
6.5778	8.240	50.71	545.7	0.000
6.6667	8.254	51.44	565.5	0.000
6.7556	8.269	52.17	585.7	0.000
6.8444	8.284	52.91	606.0	0.000
6.9333	8.299	53.65	626.7	0.000
7.0222	8.313	54.38	647.5	0.000
7.1111	8.328	55.12	668.6	0.000
7.2000	8.343	55.86	689.9	0.000
7.2889	8.357	56.61	711.4	0.000
7.3778	8.372	57.35	733.1	0.000
7.4667	8.387	58.10	755.1	0.000
7.5556	8.402	58.84	777.2	0.000
7.6444	8.417	59.59	799.6	0.000
7.7333	8.432	60.34	822.2	0.000
7.8222	8.446	61.09	845.1	0.000
7.9111	8.461	61.84	868.1	0.000

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8.0000	8.476	62.59	891.3	0.000
8.0889	8.491	63.35	914.8	0.000

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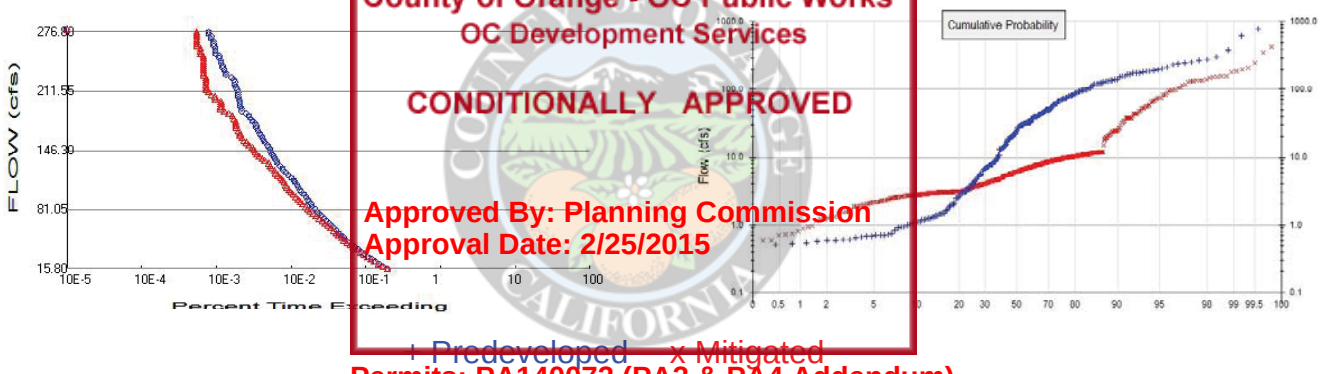
Analysis Results

POC 1



Predeveloped Landuse Totals for POC #1
Total Pervious Area: 252.13
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 50.426
Total Impervious Area: 201.704

Flow Frequency Method: Cunnane

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	157.982559
5 year	237.992064
10 year	276.796517
25 year	526.292799

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	97.552963
5 year	156.806621
10 year	199.236067
25 year	312.137703

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
15.7983	3207	3204	99	Pass
18.4346	2784	2784	99	Pass
21.0709	2457	2414	98	Pass
23.7073	2205	2156	97	Pass
26.3436	1958	1917	97	Pass
28.9800	1745	1744	99	Pass
31.6163	1571	1556	99	Pass
34.2527	1421	1382	97	Pass
36.8890	1300	1242	95	Pass
39.5254	1176	1116	94	Pass
42.1617	1071	1012	94	Pass
44.7981	989	921	93	Pass
47.4344	897	848	94	Pass
50.0708	822	783	95	Pass
52.7071	760	715	94	Pass
55.3434	711	661	92	Pass
57.9798	663	602	90	Pass
60.6161	614	551	89	Pass
63.2525	572	507	88	Pass
65.8888	525	467	88	Pass
68.5252	488	427	87	Pass
71.1615	456	389	85	Pass
73.7979	419	353	84	Pass
76.4342	388	322	82	Pass
79.0706	368	293	79	Pass
81.7069	343	274	79	Pass
84.3433	319	259	81	Pass
86.9796	304	233	76	Pass
89.6159	285	217	76	Pass
92.2523	275	206	74	Pass
94.8886	262	191	72	Pass
97.5250	244	175	71	Pass
100.1613	226	162	71	Pass
102.7977	218	153	70	Pass
105.4340	206	146	70	Pass
108.0704	197	138	70	Pass
110.7067	184	132	71	Pass
113.3431	179	127	70	Pass
115.9794	167	120	71	Pass
118.6158	151	110	72	Pass
121.2521	143	103	72	Pass
123.8884	130	98	75	Pass
126.5248	126	91	72	Pass
129.1611	117	86	73	Pass
131.7975	108	83	76	Pass
134.4338	104	73	70	Pass
137.0702	99	67	67	Pass
139.7065	96	61	63	Pass
142.3429	92	57	61	Pass
144.9792	89	55	61	Pass
147.6156	86	52	60	Pass
150.2519	83	50	60	Pass
152.8883	80	45	56	Pass

155.5246	74	42	56	Pass
158.1609	70	38	54	Pass
160.7973	68	36	52	Pass
163.4336	65	34	52	Pass
166.0700	63	34	53	Pass
168.7063	59	33	55	Pass
171.3427	56	30	53	Pass
173.9790	56	30	53	Pass
176.6154	54	30	55	Pass
179.2517	50	30	60	Pass
181.8881	47	28	59	Pass
184.5244	45	27	60	Pass
187.1608	41	24	58	Pass
189.7971	36	21	58	Pass
192.4334	36	19	52	Pass
195.0698	35	19	54	Pass
197.7061	34	19	55	Pass
200.3425	34	19	55	Pass
202.9788	33	16	48	Pass
205.6152	32	16	50	Pass
208.2515	32	14	43	Pass
210.8879	32	13	40	Pass
213.5242	31	12	38	Pass
216.1606	30	12	40	Pass
218.7969	29	12	41	Pass
221.4332	29	12	41	Pass
224.0696	28	12	42	Pass
226.7059	26	12	46	Pass
229.3423	22	11	50	Pass
231.9786	22	11	50	Pass
234.6150	21	11	52	Pass
237.2513	20	11	55	Pass
239.8877	20	11	55	Pass
242.5240	19	11	57	Pass
245.1604	19	11	57	Pass
247.7967	18	11	61	Pass
250.4331	18	11	61	Pass
253.0694	16	10	62	Pass
255.7057	16	10	62	Pass
258.3421	16	10	62	Pass
260.9784	15	9	60	Pass
263.6148	15	9	60	Pass
266.2511	15	9	60	Pass
268.8875	14	9	64	Pass
271.5238	14	9	64	Pass
274.1602	13	9	69	Pass
276.7965	13	9	69	Pass

Permits: PA140072 (PA3 & PA4 Addendum)

Model Default Modifications

Total of 0 changes have been made.

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Permits: PA140072 (PA3 & PA4 Addendum)

PERLND Changes

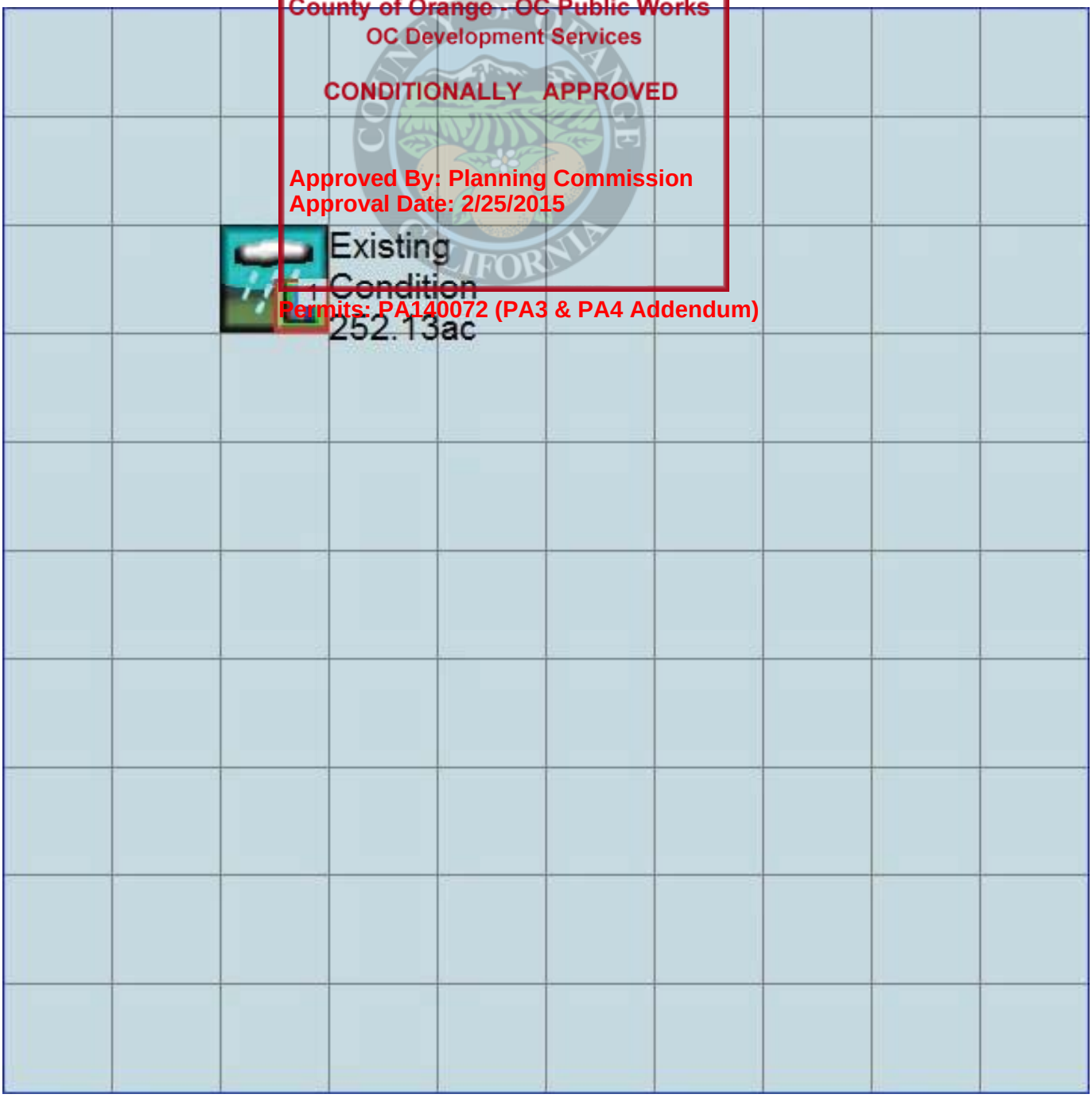
No PERLND changes have been made.

IMPLND Changes

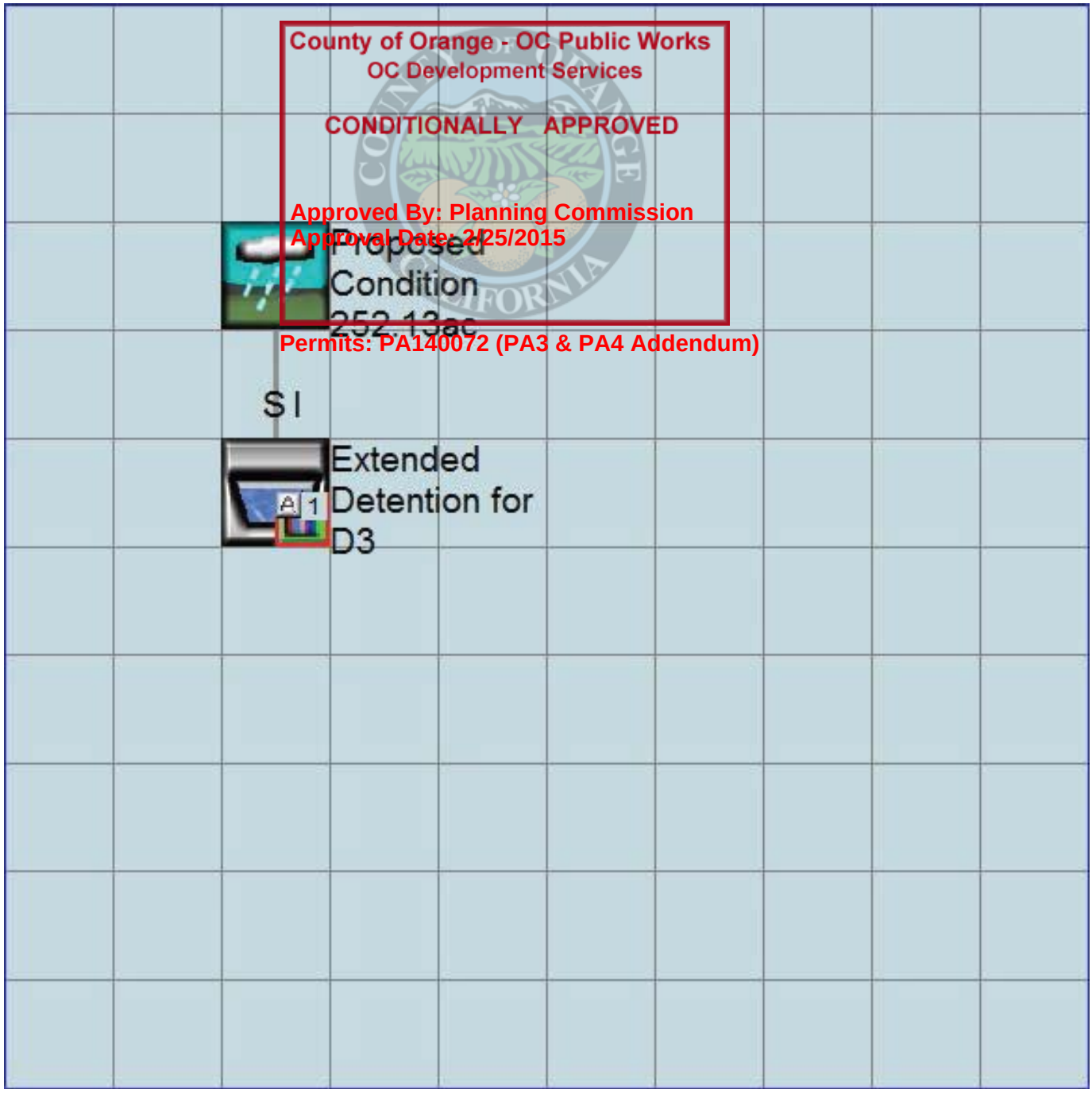
No IMPLND changes have been made.

Appendix

Predeveloped Schematic



Mitigated Schematic



Permits: PA140072 (PA3 & PA4 Addendum)

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Attachment 5: Master Area Plan

Permits: PA140072 (PA3 & PA4 Addendum)

The Ranch Plan

Planning Areas 3 and 4

Master Area Plan

and

Subarea Area Plans

3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8 and 4.1

(PA14-0072, PA14-0073, PA14-0074, PA14-0075, PA14-0076, PA14-0077, PA14-0078, PA14-0079, PA14-0080, AND PA14-0081)

February 25, 2015

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Ranch Plan Planned Community

Permits: PA140072 (PA3 & PA4 Addendum)

Planning Areas 3 and 4

Master Area Plan

February 25, 2015

Application # PA14-0072

RMV Community Development, LLC

Ranch Plan Planned Community - Planning Areas 3 and 4 Master Area Plan

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LIST OF EXHIBITS

ATTACHMENTS

Ranch Plan Planned Community

Planning Areas 3 and 4 Master Area Plan

Introduction

The purpose of this Master Area Plan for Ranch Plan Planned Community (PC) Planning Areas 3 and 4 is to provide a process to demonstrate that the intent of conceptual development approved on the General Plan and the Ranch Plan PC will be realized through more precise discretionary actions. The Area Plan process for the Ranch Plan PC is divided into two levels, a Master Area Plan and Subarea Plan. The Master Area Plan focuses on a Planning Area (or in this case two planning areas) in their entirety and addresses more regional topics/issues. The Subarea Plan focuses on segments of the Planning Area(s) and community level topics/issues.

A Master Area Plan consists of a map, a set of statistics and other information that describe the general location and type of proposed uses; A Master Area Plan is a process for the refinement of development and open space boundaries and statistical information on an individual and overall Planning Area basis. The map and statistical information presented in the Master Area Plan will be the impetus for refinements and amendments to the PC Development Map and PC Statistical Table. All subsequent projects within the planning area shall be in substantial conformance with the provisions of the approved Master Area Plan. The Planning Commission is the approving authority for the Master Area Plan and Subarea Plan applications and any subsequent amendments, with the exception of reallocations and other adjustments that may be approved by the Director, OC Development Services, as specified in PC Program Text Section II.A.4.

1. BACKGROUND:

Entitlements: On November 8, 2004, the Orange County Board of Supervisors approved a General Plan Amendment (Resolution No. 04-291), Zone Change (Resolution No. 04-292 and Ordinance No. 04-014), and Development Agreement (Resolution No. 04-293 and Ordinance No. 04-015) for the original 22,815-acre Ranch Plan Planned Community area.

CEQA: Concurrent with the foregoing planning efforts, the Board of Supervisors adopted Resolution No. 04-290, certifying FEIR 589 as complete, adequate, and in full compliance with the requirements of CEQA and the State CEQA Guidelines. A Statement of Findings and Overriding Considerations were adopted as part of the approval process. Findings for unavoidable adverse impacts were made for the following topical areas: land use and relevant planning, agricultural resources, water resources, air quality, noise, aesthetics and visual resources, mineral resources, fire protection services and facilities, traffic and circulation, and biological resources.

Settlement Agreement: On December 8, 2004, the City of Mission Viejo (City) and a coalition of concerned environmental groups (Resource Organizations) filed separate actions in the Orange County Superior Court challenging the Board of Supervisors' approval of the Ranch Plan project and its certification of FEIR 589. Following a series of meetings and negotiations between representatives of the County, the City, the applicant, and the Resource Organizations, the parties achieved full settlement of the

outstanding issues on June 9, 2005 (City) and August 16, 2005 (Resource Organizations), with dismissal of the individual lawsuits following thereafter. The terms of the individual settlements were memorialized in separate settlement agreements executed by and between the parties on the identified dates. Notably, the provisions of the August 16, 2005 settlement agreement (Resource Organizations) resulted in certain refinements to the Ranch Plan project that, in effect, increased the amount of open space that will be permanently protected and managed (i.e., from approximately 15,132 gross acres to 14,942 gross acres) and reduced the acreage available for development activities (i.e., from approximately 7,683 acres to 5,873 acres).

Resource Agency Approvals: The Southern Subregion NCCP/MSAA/HCP and associated Environmental Impact Report/Environmental Impact Statement (EIR/EIS) was prepared by the County of Orange in cooperation with the CDFG and the USFWS to provide for the conservation of designated State- and federally listed and unlisted species and associated habitats that are currently found within the 132,000-acre NCCP/MSAA/HCP study area (i.e., the "Southern Subregion"). The NCCP/MSAA/HCP creates a permanent habitat reserve consisting of (1) 11,950 County of Orange-owned acres contained within 3 existing County regional and wilderness parks (O'Neill Regional Park, Riley Wilderness Park, and Caspers Wilderness Park) and (2) 20,868 acres owned by Rancho Mission Viejo (RMV). The USFWS distributed the Final EIS for public review on November 13, 2006. The Implementation Agreement (IA) was signed by the Participating Landowners (i.e., the County, RMV, and the Santa Margarita Water District [SMWD]) in December 2006. CDFG issued an MSAA for the Ranch Plan on September 29, 2008. The MSAA covers the activities associated with implementation of the approved development. The covered activities include: (1) development in Planning Areas 2, 3, 4, 5, and 8; (2) cultivation of orchards; (3) roadway improvements; (4) construction of bikeways and trails; (5) sewer and wastewater facilities; (6) drainage, flood-control, and water quality facilities; (7) maintenance of existing facilities within the Ranch Plan boundary; (8) habitat restoration; (9) geotechnical investigations; and (10) relocation of the RMV headquarters.

Special Area Management Plan: A Special Area Management Plan (SAMP) is a voluntary watershed-level planning and permitting process involving local landowners and public agencies that seek permit coverage under Section 404 of the Federal Clean Water Act for future actions that affect jurisdictional "Waters of the U.S.". The SAMP, which was approved by the USACE in 2007, establishes three regulatory permitting procedures: (1) Regional General Permit Procedures for Maintenance Activities Outside of the Ranch Plan Planned Community; (2) Letter of Permission Procedures for Future Qualifying Applicants Subject to Future Section 404 (b)(1) Guidelines Review Outside the Ranch Plan Planned Community; and (3) Long-Term Individual Permits/Letters of Permission for Dredge and Fill Activities within the Ranch Plan Planned Community. With respect to the Ranch Plan Planned Community, the USACE issued an Individual Permit of extended duration to specify allowable impacts to "Waters of the U.S." over the life of the Ranch Plan project. The long-term Individual Permit would require additional review and analysis as individual projects are proposed within the Ranch Plan Planned Community to ensure consistency with allowable impacts and the terms and conditions of this long-term Individual Permit. The USACE would review specific

activities under the Letter of Permission procedures for the geographic area covered by the Individual Permit as each activity is proposed for implementation.

Annexation: In 2009 a 132-acre area was sold to the City of San Juan Capistrano and annexed into the City as recreational open space. This change in status of a portion of the overall Ranch Plan area resulted in administrative corrections to the Ranch Plan Planned Community Development Map and Ranch Plan Statistical Table. The balance of the 22,683-acre RMV Planning Area, totaling approximately 16,915 acres (or approximately 74.57 percent), was identified for open space uses with 5,768 acres set aside for future development uses.

2. LOCATION AND EXISTING USES

This Master Area Plan addresses Planning Areas 3 and 4 which are a portion of the Ranch Plan Planned Community shown graphically on Exhibit 1: Regional Location Map, and Exhibit 2: Local Vicinity Map. The approximately 22,683-acre Ranch Plan project site is located in southeastern Orange County located within unincorporated Orange County.

The 3,313-gross acre Planning Areas 3 and 4 development use area is located north and south of Ortega Highway, east of Antonio Parkway, the planned community of Ladera Ranch, and the Ranch Plan village of Sendero, south of the planned community of Coto de Caza, west of Planning Area 4 and Caspers Regional Park. Planning Area 3 is located in Gobernadora Canyon. Gobernadora Creek flows in a southerly direction along the westerly boundary of the Planning Area to its confluence with San Juan Creek, which is a dominant physical feature extending northeast and southwest through the larger Ranch Plan Planned Community, is located south of Planning Area 3.

The Planning Area 4 development use area is located south of Ortega Highway, east of Antonio Parkway, the planned community of Ladera Ranch, the Ranch Plan village of Sendero, Planning Area 3 and south of Caspers Regional Park. Planning Area 4 is located in Central San Juan Creek Canyon. San Juan Creek, which is a dominant physical feature extending northeast and southwest through the larger Ranch Plan Planned Community, is located north of Planning Area 4.

Future Cow Camp Road traverses Planning Area 3 in a generally east-west direction and existing Ortega Highway traverses the westerly portion of Planning Area 4 in a generally north-south direction.

Portions of Planning Area 3 have been used for agricultural, nursery and other lease uses for the past 120 years. Existing non-residential agricultural land uses within Planning Area 3 include avocado and citrus production areas and barley fields. Color Spot Nursery is also located in Planning Area 3 as are several industrial type leases including CR&R/Solag Disposal Company, Calmat, Ewles Materials, Olsen Pavingstone, Cemex and Greenstone Materials. Along the southern boundary of Planning Area 3 is an area known historically as Cow Camp. Existing uses in this area include homes for ranch agricultural employees, ranch offices, a horse riding arena, pastures and stock yards, tack room, shop equipment storage and restroom facility. There are several unpaved ranch roads located within the Planning Area. The Gobernadora Ecological Restoration Area (GERA) is located within the Planning Area 3 open space adjacent to Planning Area 3.

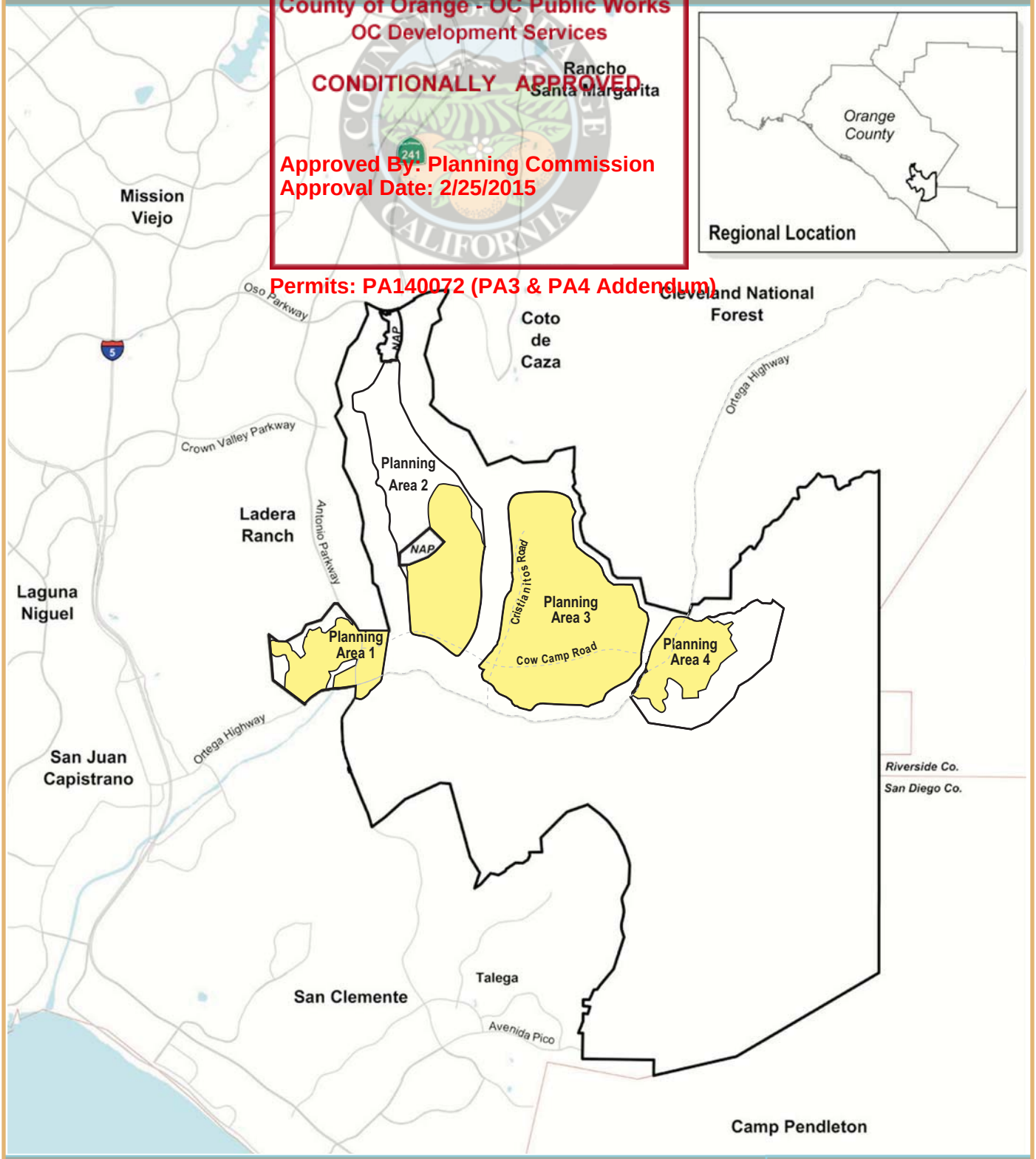
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



REGIONAL LOCATION MAP

Ranch Plan Planned Community

Exhibit: 1

Not To Scale

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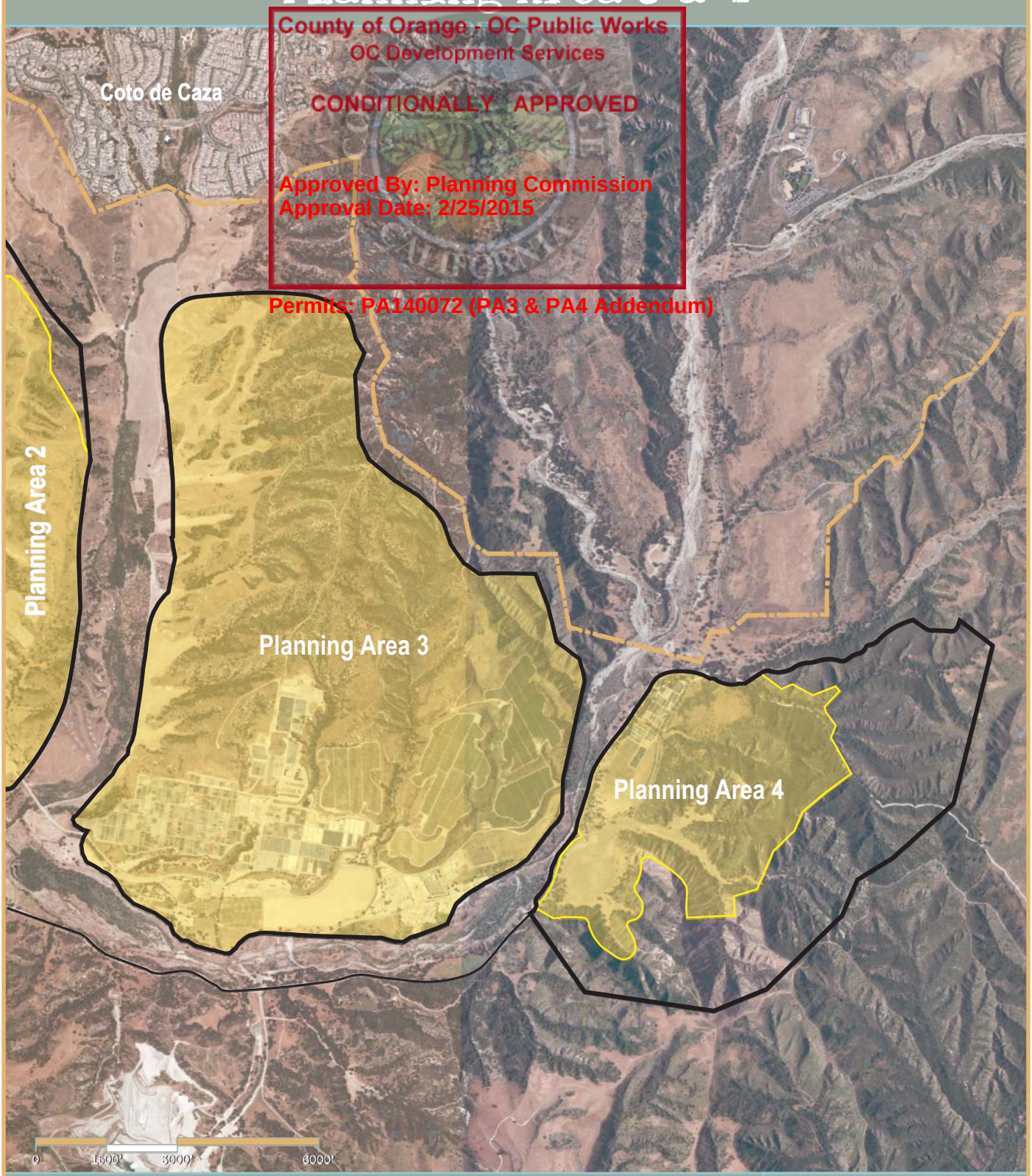
Planning Area 3 & 4



MASTER AREA PLAN
LOCAL VICINITY MAP

Ranch Plan Planned Community

Exhibit: 2

N

3. MASTER AREA PLAN PROPOSAL

As required by Ranch Plan PC Program Text Section I.C, Condition of Approval No. 1, a Master Area Plan is required for each of the development Planning Areas including Planning Areas 3 and 4. Exhibit 3 on the following page depicts the Ranch Plan Planning Process, and identifies the Master Area Plan in the context of all of the required Ranch Plan entitlement plans, programs and requirement sources.

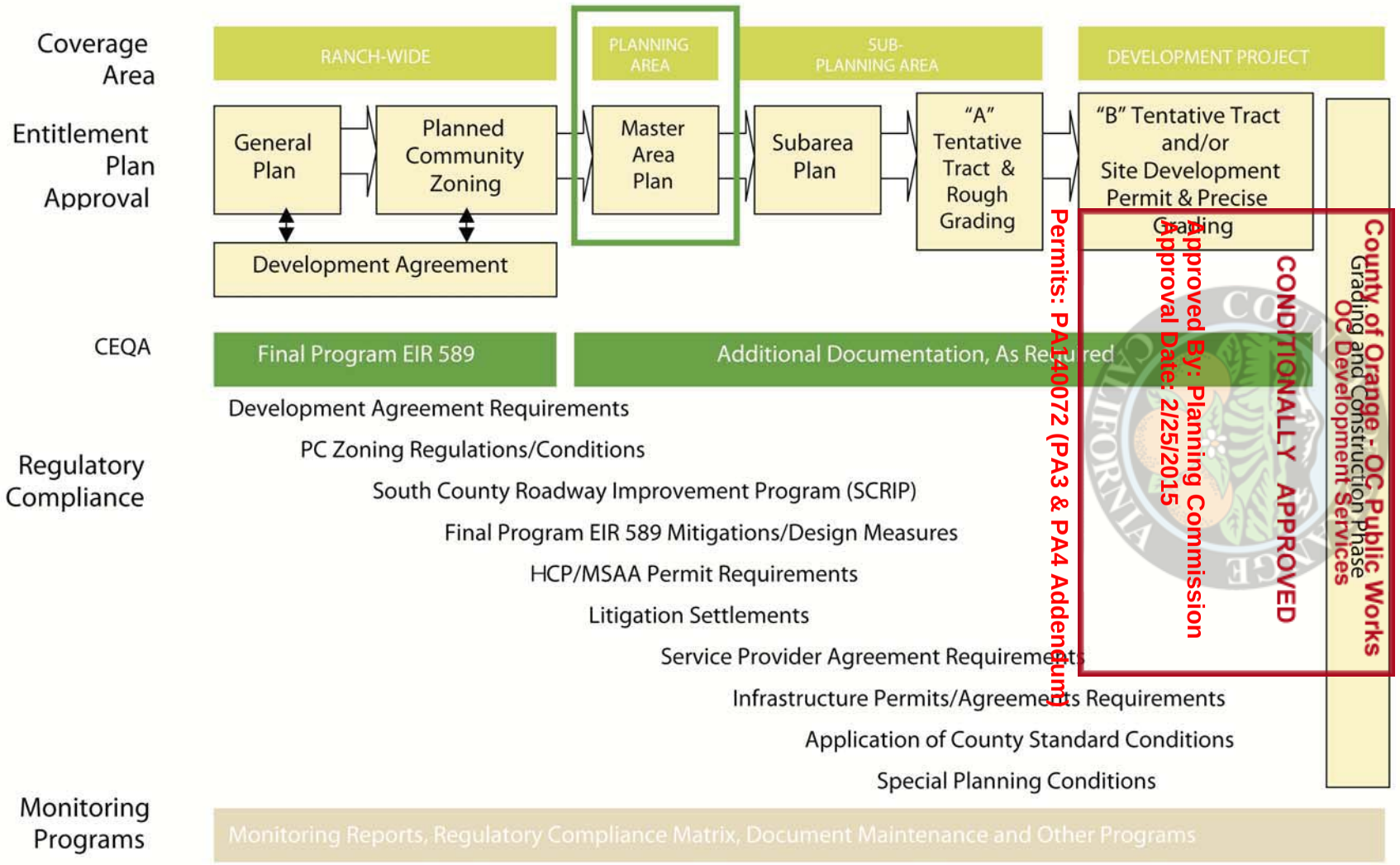
As defined by PC Program Text Section II.B, a Master Area Plan consists of a map, set of statistics, and other information that describes the general location and type of proposed uses and is a process for the refinement of development and open space boundaries and statistical information on an individual and overall Planning Area basis. All subsequent projects within the planning area must be in substantial conformance with the provisions of the approved Master Area Plan.

3.1 PC Development Map and PC Statistical Table Amendment:

Two of the key components of the Ranch Plan PC Program Text are the PC Statistical Table and the Development Map. The PC Statistical Table regulates the land uses in each planning area and reflects the overall development level throughout the Ranch Plan Planned Community area. The PC Development Map reflects the type of development within each Planning Area. Although the overall zoning, which includes the zoning map and development regulations, was adopted by ordinance, the PC Statistical Table and PC Development Map were adopted by resolution. This was done because the County recognizes that the zoning regulations allow modifications to the PC Statistical Table and PC Development Map, including transfer of development between planning areas. Modifications to the PC Statistical Table and PC Development Map would require Planning Commission, not Board of Supervisors' action, except for those reallocations and other adjustments that may be approved by the Director, OC Planning, as noted above.

The land use plan for the 3,313-gross acre Planning Areas 3 and 4 includes, residential and non-residential uses within the limits of the Ranch Plan Planned Community Development Map and Statistical Table limits as depicted on Table 1, Planned Community Statistical Table Revision. The Planning Areas 3 and 4 acreage and square footage totals are reflected in the shaded portion of Table 1, PC Statistical Table Revision.

Planning Area 3 & 4



MASTER AREA PLAN
PLANNING PROCESS

Ranch Plan Planned Community

Exhibit: 3

Planning Area 3 & 4

Planning Area	Development Use										Open Space Use	Planning Area Totals
	Residential		Urban Activity Center (UAC)		Neighborhood Center		Business Park		Golf Resort			
	Gross Acres	Maximum Dwelling Units	Gross Acres	Maximum Square Footage of Non-Residential Uses (000)	Gross Acres	Maximum Square Footage (000)	Gross Acres	Maximum Square Footage (000)	Gross Acres	Gross Acres	Open Space Acres	Gross Acres
Planning Area 1	446	1,287	5	30	13	95				464	240	704
Planning Area 2	795	2,700	45	500	5	25				845	835	680
Planning Areas 3 & 4	2,416	7,500	201	2,950	19	145	50	305		2,686	627	313
Planning Areas 5 & 8	1,705	2,513			13	235	30	915	25	1,773	3,010	4,783
Planning Area 10											12,203	12,203
Subtotal	5,362	14,000	251	3,480	50	500	80	1,220	25	5,768	16,915	22,683
Total												

Revised July 26, 2006, Per Planning Commission Resolution # 06-05.
Revised February 23, 2011, per PA110003, PA110004, PA110005, and PA110006.
Revised March 27, 2013, per Planning Commission
Revised February ##, 2015, per Planning Commission Resolution # 15-###.

PC STATISTICAL TABLE REVISION (Per Ranch Plan Planned Community Program Text Section II.A.4.b.)

Ranch Plan Planned Community

PA-3 & 4 MASTER AREA PLAN
Table 1

February 25, 2015

3.2 Land Use Plan and Master Area Plan Development Table:

The Master Area Plan is intended to show the general location, acreage and type of land use for each Planning Subarea. Eight Subareas are contained for Planning Areas 3 and one Subarea is contained within Planning Area 4. The Land Use Plan (Exhibit 4) depicts the general location of each proposed Subarea Plan within Planning Areas 3 and 4, as required by Ranch Plan PC Program Text Section II.B.3.a.2. The distribution of these land use types is also depicted on Table 2, PA3-4 Master Area Plan Development Table. The location of each of the Subareas is also depicted in Exhibit 4 (Land Use Plan).

The Planning Areas 3 and 4 Master Area Plan include residential, Urban Activity Center (UAC), Business Park, Neighborhood Center and open space uses as well as public facilities and public parklands, and open space. Table 2 provides statistical information for Planning Areas 3 and 4. Exhibit 4, Planning Areas 3 and 4 Land Use Plan, depicts the 30-foot grading contours and identifies the land uses within Planning Areas 3 and 4. In summary, 2,039-gross acres of residential use allowing 7,500 total dwelling units, 270 gross acres and 3,500,000 square feet of non-residential uses (201 acres of Urban Activity Center, 19 acres of Neighborhood Center and 50 acres of Business Park) are proposed within the 2,686-gross acre development area portion of Planning Areas 3 and 4. 2,171-acres of the 2,186-gross acre PA3 is development area, with 15 acres of open space to be determined at the time of subdivision approvals. The non-development area portion of the 1,127 Planning Area 4 (612-gross acres) will be dedicated as permanent open space reserve. The provision of open space dedications associated with Planning Areas 3 and 4 is discussed further in Section 4.1.D.

The Planning Area 4 Master Area Plan would include Urban Activity Center uses, residential uses, and open space. Table 2 provides statistical information for Planning Area 4. Exhibit 4, Planning Areas 3 and 4 Land Use Plan, depicts the 30-foot grading contours and identifies the land uses within Planning Area 4.

The nine Planning Subareas within PA3 and PA4 are generally described below, including proposed land uses, and described in detail in each specific Subarea Plan.

Subarea 3.1

The 257-gross-acre Subarea 3.1 is located in the southwesterly portion of Planning Area 3. Cow Camp Road would traverse the southerly boundary of the subarea in a generally east-west direction. Gobernadora Canyon is located westerly of Subarea 3.1. The following land uses are proposed:

- 254 gross acres of residential development area, allowing a total of 962 dwelling units, including 390 age-qualified units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
    - A potential affordable housing site of up to 3-gross-acres, in compliance with the Affordable Housing Implementation Agreement (AHIA).
    - Up to 12 acres of community facility uses (including, but not limited to a potential K-8 school and a day care center).

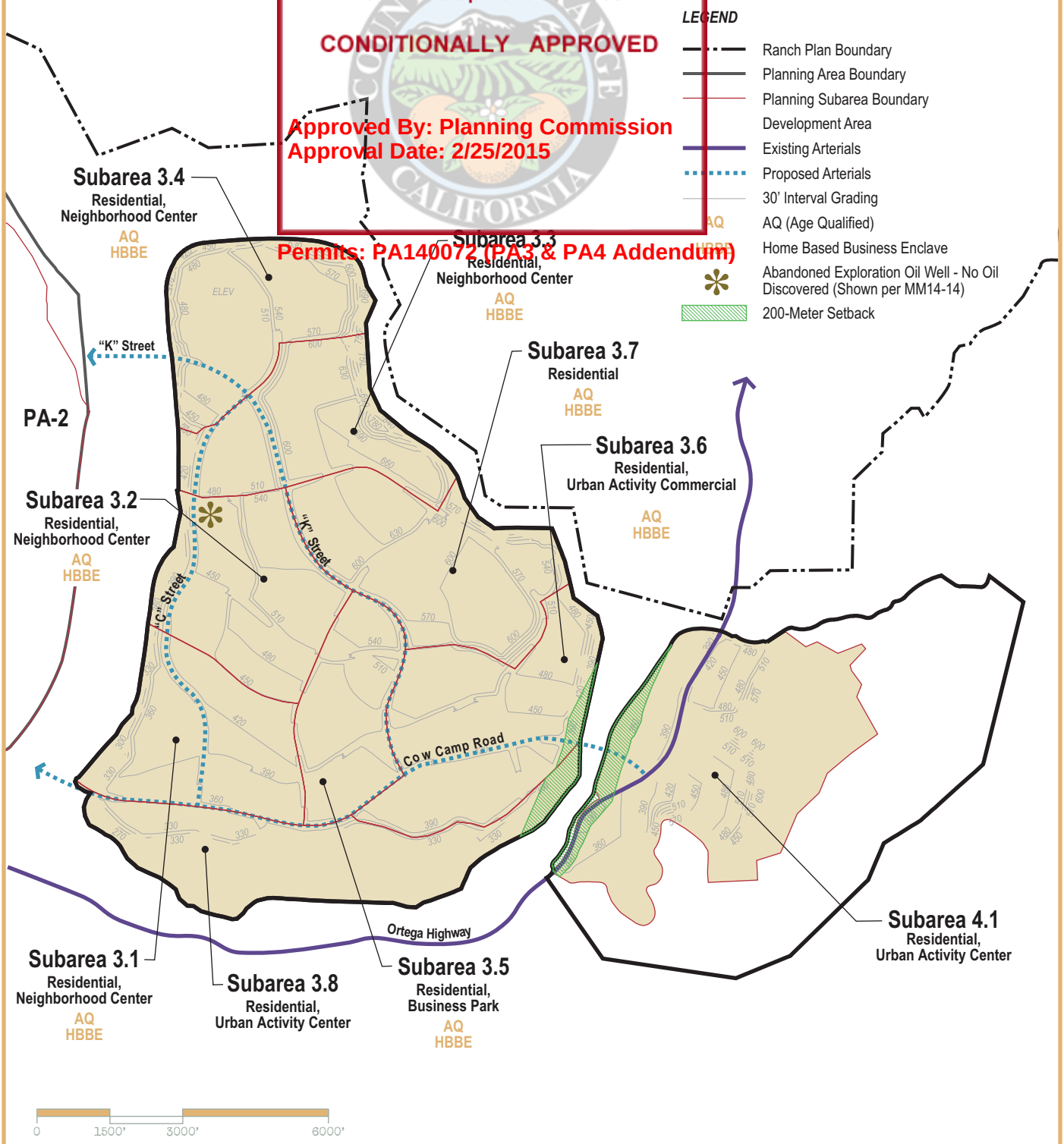
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



MASTER AREA PLAN
LAND USE PLAN

Ranch Plan Planned Community

Exhibit: 4

N

Planning Area 3 & 4

Planning Area	Development Use														
	Residential					Urban Activity Center (UAC)		Neighbor-hood Center		Business Park		Age Restricted (PA3 & PA4 Addendum)		Open Space Use	Planning Area
	Gross Acres	Net Acres	Maximum Dwelling Units	Age Qualified Dwelling Units	Parkland Gross Acreage	Gross Acres	Maximum Square Footage of Non-Residential Uses (000)	Gross Acres	Maximum Square Footage (000)	Gross Acres	Maximum Square Footage (000)	Gross Acres	Gross Acres	Open Space Acres	Gross Acres
Planning Areas 3 & 4	**2,416**	1,450	**7,500**	2,919	100	**201**	**2,950**	**19**	**145**	**50**	**305**		2,686	627	3,313
Subarea 3.1	254	165	962	390	5			3	15				**257**		
Subarea 3.2	266	172	1,154	468	5			3	15				**269**		
Subarea 3.3	249	143	1,001	406	5			3	15				**252**		
Subarea 3.4	242	150	881	357	5			10	100				**252**		
Subarea 3.5	128	67	700	284	5					50	305		**178**		
Subarea 3.6	282	154	1,171	515	20	53	750						**335**		
Subarea 3.7	319	207	1,131	499	5								**319**		
Subarea 3.8	274				50	35	500						**309**		
Subarea 4.1	402	392	500			113	1,700						**515**		

DEVELOPMENT TABLE (Per Ranch Plan Planned Community Program Text Section II.B.3.a. and II.B.3.b.)

Ranch Plan Planned Community

PA-3 & 4 MASTER AREA PLAN
Table 2

February 25, 2015

- A potential Home Based Business Enclave (HBBE).
- Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails.
- Up to 5 acres of public parkland

- Up to 3 acres and up to 15,000 square-feet of uses allowed by Section III.C.1.a (Neighborhood Center – Principal Permitted Uses) of the Ranch Plan PC Program Text.

Subarea 3.2

The 269-gross-acre Subarea 3.2 is located in the middle-westerly portion of Planning Area 3. “C” Street would traverse the westerly portion of the subarea and “K” Street would traverse the easterly boundary of the subarea, both in a generally north-south direction. Gobernadora Canyon is located westerly of Subarea 3.2. The following land uses are proposed:

- 266 gross acres of residential development area, allowing a total of up to 1,154 dwelling units, including approximately 468 age-qualified units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
  - A potential affordable housing site of up to 6-gross-acres in compliance with the Affordable Housing Implementation Agreement (AHIA).
  - A potential Home Based Business Enclave (HBBE).
  - Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails.
  - Up to 5 acres of public parkland
- Up to 3 acres and up to 15,000 square-feet of uses allowed by Section III.C.1.a (Neighborhood Center – Principal Permitted Uses) of the Ranch Plan PC Program Text.

Subarea 3.3

The 252-gross-acre Subarea 3.3 is located in the north-central portion of Planning Area 3. “C” Street would traverse the westerly boundary of the subarea and “K” Street would traverse the middle of the subarea, both in a generally north-south direction. Gobernadora Canyon is located westerly and Caspers Wilderness Park is located easterly of Subarea 3.3. The following land uses are proposed:

- 249 gross acres of residential area, allowing a total of up to 1,001 dwelling units, including approximately 406 age-qualified units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
  - A potential affordable housing site of up to 6-gross-acres in compliance with the Affordable Housing Implementation Agreement (AHIA).
  - A potential Home Based Business Enclave (HBBE).

- Up to 2 acres of community facility use (including, but not limited to a potential fire station and a day care center).
- Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails.
- Up to 5 acres of public parkland

- Up to 3 acres and up to 15,000 square-feet of uses allowed by Section III.C.1.a (Neighborhood Center – Principal Permitted Uses) of the Ranch Plan PC Program Text.

Subarea 3.4

The 252-gross-acre Subarea 3.4 is located in the northerly portion of Planning Area 3. "K" Street would traverse the southwesterly portion of the subarea, in a generally east-west direction. Gobernadora Canyon is located westerly, Gobernadora Basin is located northwesterly, Coto de Caza is located northerly and Caspers Wilderness Park is located easterly of Subarea 3.4. The following land uses are proposed:

- 242 gross acres of residential area, allowing a total of up to 881 dwelling units, including approximately 357 age-qualified units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
  - A potential affordable housing site of up to 3-gross-acres in compliance with the Affordable Housing Implementation Agreement (AHIA).
  - A potential Home Based Business Enclave (HBBE).
  - Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails.
  - Up to 5 acres of public parkland
- Up to 10 acres and up to 100,000 square-feet of uses allowed by Section III.C.1.a (Neighborhood Center – Principal Permitted Uses) of the Ranch Plan PC Program Text.

Subarea 3.5

The 178-gross-acre Subarea 3.5 is located in the central portion of Planning Area 3. Cow Camp Road would traverse the southerly boundary of the subarea in a generally east-west direction, and "K" Street would traverse the easterly boundary of the subarea in a generally north-south direction. Subarea 3.5 is surrounded by Subarea 3.1 to the west, Subarea 3.2 to the northwest, Subarea 3.7 to the northeast, Subarea 3.6 to the east and Subarea 3.8 to the south. The following land uses are proposed:

- 128 gross acres of residential area, allowing a total of up to 700 dwelling units, including approximately 284 age-qualified units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
  - A potential affordable housing site of up to 6-gross-acres in compliance with the Affordable Housing Implementation Agreement (AHIA).
  - A potential Home Based Business Enclave (HBBE).

- Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails.
- Up to 20 acres of community facilities (including, but not limited to potential community center, church, fire station and library)
- Up to 5 acres of public parkland

- Up to 50 acres and up to 305,000 square-feet of uses allowed by Section III.E.1.a (Business Park – Principal Permitted Uses) of the Ranch Plan PC Program Text.

Subarea 3.6

The 335-gross-acre Subarea 3.6 is located in the southeasterly portion of Planning Area 3. Cow Camp Road would traverse the middle of the subarea in a generally east-west direction. San Juan Creek and Planning Area 4 located easterly of Subarea 3.6. The following land uses are proposed:

- 282 gross acres of residential area, allowing a total of up to 1,171 dwelling units, including approximately 515 age-qualified units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
  - A potential affordable housing site of up to 6-gross-acres in compliance with the Affordable Housing Implementation Agreement (AHIA).
  - A potential Home Based Business Enclave (HBBE)
  - Up to 17 acres of community facility use (including, but not limited to a potential K-8 school site, a fire station and a day care center).
  - Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails.
  - Up to 20 acres of public parkland

- Up to 53 acres and up to 750,000 square-feet of uses permitted by Section III.D.1.a (Urban Activity Center – Principal Permitted Uses) of the Ranch Plan PC Program Text.

Subarea 3.7

The 319-gross-acre Subarea 3.7 is located in the east-central portion of Planning Area 3. ”K” Street would traverse the westerly boundary of the subarea in a generally north-south direction. Caspers Wilderness Park is located easterly of Subarea 3.7. The following land uses are proposed:

- 319 gross acres of residential area, allowing a total of up to 1,131 dwelling units, including approximately 499 age-qualified units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
  - Up to 3-acres of community facility use (including, but not limited to a potential church).
  - A potential affordable housing site of up to 6-gross-acres in compliance with the Affordable Housing Implementation Agreement (AHIA).

- A potential Home Based Business Enclave (HBBE).
- Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails.
- Up to 5 acres of public parkland.

Subarea 3.8

The 309-gross-acre Subarea 3.8 is located in the southerly portion of Planning Area 3. Cow Camp Road would traverse the northern boundary of the westerly portion of the subarea in a generally an east-west direction. San Juan Creek is located southerly of Subarea 3.8. The following land uses are proposed:

- 274 gross acres of development area generally zoned residential, which may include, but not be limited to, the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
  - Up to 50 acres of proposed sports park uses.
  - Approximately 80 acres of detention basins and water quality basins, as allowed by Section III.F.1.1.1)b) (Community Facilities) of the Ranch Plan Planned Community Program Text.
  - Approximately 75 acres of uses allowed by Ranch Plan Planned Community Text Section III.H: Agricultural and Other Existing and On-Going Uses (including but not limited to Item III.H.2.d: "Ranching facilities also used periodically for recreational purposes (including "Cow Camp" at 31471 Ortega Highway."
- Up to 35 acres and up to 500,000-square-feet of uses permitted by Section III.D.1.a (Urban Activity Center – Principal Permitted Uses) of the Ranch Plan PC Program Text.

Subarea 4.1

Subarea 4.1 is the only Subarea proposed within Planning Area 4. The 1,127-gross acre Planning Area 4 includes the 515-gross acre Subarea 4.1 boundary that is coterminous with the Development Area portion of Planning Area 4. Ortega Highway would traverse the westerly portion of the subarea in a generally east-west direction. San Juan Creek is located northwesterly of Subarea 4.1. The following land uses are proposed:

- 402 gross acres of residential area, allowing a total of up to 500 dwelling units. This residential area may also include, but not be limited, to the following uses allowed by Section III.A (Residential) of the Ranch Plan Planned Community Program Text:
  - A potential affordable housing site of up to 3-gross-acres in compliance with the Affordable Housing Implementation Agreement (AHIA).
  - A potential Home Based Business Enclave (HBBE).
  - Private recreational uses, including but not limited to clubhouses, swimming pools, sports fields, sports courts, tot lots, and pedestrian and bike trails.

- Up to 113 acres and up to 1,700,000 square feet of uses permitted by Section III.D.1.a (Urban Activity Center – Principal Permitted Uses) of the Ranch Plan PC Program Text.
- The remaining undeveloped 612 acres of Subarea 4.1 would be open space, with other potential uses including but not limited to a future reservoir and Agricultural and Other Existing and On-Going Uses allowed by Ranch Plan Planned Community Text Section III.H.2.d.

The Planning Areas 3 and 4 Master Area Plan Development Table (Table 2) incorporates the PC Statistical Table use acreages and detailed acreages for proposed land use within each Subarea Plan, as required by Ranch Plan PC Program Text Section II.B.3.a. 2, 3, 4 and 6. Specifically, Table 2 denotes the proposed gross and net acreage in the Residential, Urban Activity Center, Neighborhood Center and Business Park categories.

The maximum dwelling unit totals for each Subarea Plan and an estimated senior housing (age qualified) dwelling unit total for the planning area are also provided, as required by PC Program Text Section I.A, General Regulation 27.

An analysis of compatibility with existing, adjacent land uses is required by Ranch Plan PC Program Text Section II.B.3.d.1. The nearest land uses to PA3-4 will be within PA2 and PA5 of the Ranch Plan community. PA2 is being developed prior to and concurrent with the development of PA3-4. It is the intent of the master development that all Planning Areas within the Ranch Plan be compatible with each other.

The Planning Areas 3 and 4 Master Area Plan Development Table (Table 2) provides more detailed information on each Subarea as required by PC Program Text Sections II.B.3 and II.B.4, including an initial estimate of the intensity of non-residential development for purposes of analyzing traffic generation, land use compatibility and infrastructure phasing. More specific non-residential acreages and square footages will be provided with each applicable Subarea Plan.

The Planning Areas 3 and 4 Master Area Plan Development Table (Table 2) also identifies proposed park acreage, which will incrementally satisfy the Ranch Plan's General Plan Recreation Element parkland requirements as addressed by PC Program Text General Regulation 18 and Section II.B.3.a.6. The Park Implementation Plan is a program designed to plan and monitor the provision and development of local parks within the Ranch Plan in accordance with Quimby Act requirements. The Park Implementation Plan will be maintained and updated over time as the Project is implemented.

3.3 Preliminary Conceptual Grading:

The proposed PA3-4 Land Use Plan (Exhibit 4) provides the PA3-4 preliminary conceptual grading at 30-foot contour intervals, as required by Ranch Plan PC Program Text Section II.B.3.a.10. A more detailed Concept Grading Plan, at ten-foot contour intervals, will be provided as part of each applicable Subarea Plan, as required by PC Program Text Section II.B.3.b.8. The Concept Grading Plan for each Subarea Plan and all subsequent subdivision and grading permits must be consistent with the preliminary concept grading shown on the proposed PA3-4 Land Use Plan (Exhibit 4), or an Area Plan amendment will be required.

3.4 Infrastructure:

It is important to note that development phasing, including residential, non-residential and infrastructure, is not specified in this Master Area Plan, nor in the Subarea Plans for Subareas 3.1 through 4.1. The project must satisfy all infrastructure requirements as each phase is implemented, but the order of implementation of each Subarea is yet to be determined. Infrastructure components for Planning Areas 3 and 4 are addressed by the text below, and on Exhibits 5 through 11.

Roadways: Exhibit 5 identifies new arterial locations per the Orange County Transportation Agency's Master Plan of Arterial Highways, including the following:

- **Cow Camp Road (Segment 2).** Cow Camp Road is proposed as an east-west major arterial highway with up to a 60 mile per hour design speed that will extend from Antonio Parkway to the existing Ortega Highway near the common boundary of the Rancho Mission Viejo Planned Community and Caspers Wilderness Park. A portion of Cow Camp Road, known as Segment 1, is located within Planning Areas 1 and 2. The segment adjacent to and within Planning Area 3 is known as Segment 2 and would include four signalized intersections and a bridge at Cañada Gobernadora (Gobernadora Bridge) and over San Juan Creek to Planning Area 4. To adhere to existing hillside contours, construction phasing, habitat preservation, and provide enhanced wildlife crossings the eastbound and westbound lanes across Cañada Gobernadora would be built as two separate bridge structures. A similar design would also be used for the bridge across San Juan Creek. The typical cross-section for Cow Camp Road would be consistent with the County of Orange Standard Plans for a major arterial highway. In its ultimate configuration there would be 6 general-purpose lanes (3 westbound and 3 eastbound) lanes west of "C" Street and 4 general purpose lanes east of "C" Street to Ortega Highway. The roadway would have 8-foot-wide shoulders, 6-foot-wide sidewalks with a raised curbed median 20 feet wide on the western reach and would transition to a collector roadway of two lanes (one lane in each direction). Cow Camp Road was addressed in FEIR 589 as New Ortega Highway. Cow Camp Road is designated as a Scenic Highway Landscape Corridor by the General Plan. In compliance, a 25-foot scenic highway easement from curb-line will be clear of structures and signage.

- **"K" Street.** "K" Street is proposed as an east-west secondary arterial highway or collector street with a 50 miles per hour minimum design speed. It will extend from the proposed partial interchange at "F" Street in Planning Area 2, cross Cañada Gobernadora, and traverses Planning Area 3 along a southeasterly alignment and connects to Cow Camp Road. Based on the current PA3 and 4 Addendum Traffic Study, anticipated average daily trips on "K" Street would not meet the threshold of classification as a secondary arterial highway. Exhibit 5 depicts "K" Street as an arterial consistent with the County of Orange Standard Plans for a secondary arterial highway (four-lane undivided roadway); however, the cross-section for a collector road (two-lane undivided roadway) may be sufficient for the bridge crossing Cañada Gobernadora.

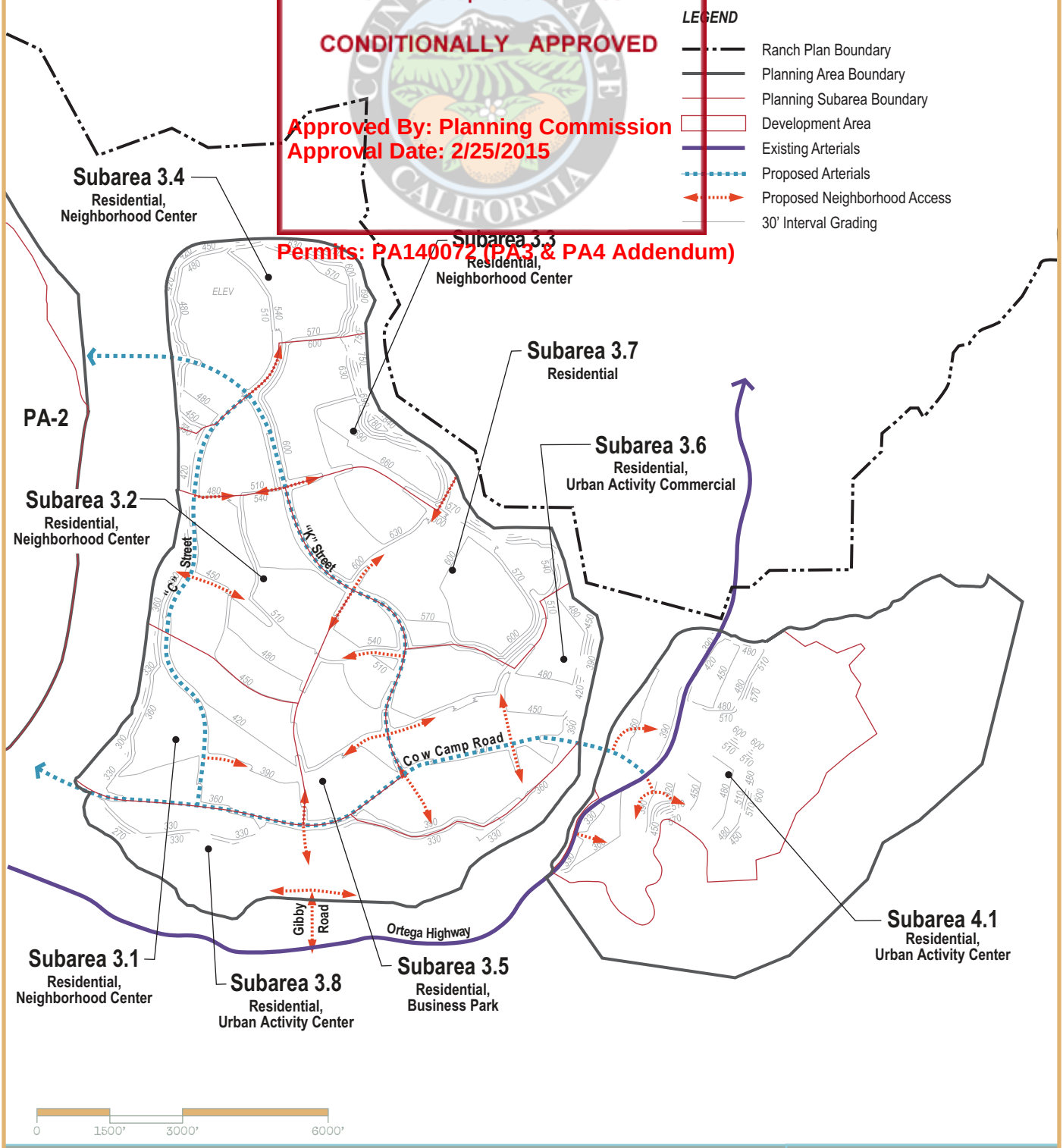
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



MASTER AREA PLAN CIRCULATION

Ranch Plan Planned Community

Exhibit: 5

N

- **"C" Street.** "C" Street is proposed as a north-south two-lane secondary arterial located on the western edge of Planning Area 3 that will intersect with Cow Camp Road in the south-west corner of the Planning Area.
- **Gibby Road.** Gibby Road is an existing ranch road that provides access to industrial uses in Planning Area 3. The roadway will be improved to County standards and a bridge structure will replace the existing Arizona crossing of San Juan Creek. The bridge will be two lanes wide and connect to the existing traffic signal on Ortega Highway at Gibby Road.
- **Ortega Highway**. Ortega Highway will be modified to allow the connection of Cow Camp Road. This will include options for an at-grade intersection or round-about. Portions of Ortega Highway may be realigned in the vicinity of Planning Area 4 while maintaining the two lane configuration. Minor roadway and drainage improvements would be constructed with the adjacent property development. An additional roundabout or signalized intersection would be added northeast of the Cow Camp Road intersection to provide access to the adjacent lots.
- **PA 4:** Roadways within Planning Area 4 will provide two-lane access from Ortega Highway into the adjacent residential and commercial use areas within Planning Area 4.

As one of the key Ranch Plan adopting actions, the South County Roadway Improvement Program (SCRIP Part I) will provide for the imposition, collection and disbursement of fees to facilitate construction of transportation improvements in Orange County that will relieve traffic congestion on existing and future transportation systems as the Ranch Plan is developed.

The County General Plan Circulation Element Scenic Highway Plan designates Cow Camp Road (from Antonio Parkway east to Ortega Highway) as a landscape corridor. Project compliance with the Scenic Highway Plan along this arterial roadway shall be consistent with Orange County General Plan Transportation Element Figure IV-15 on Page IV-39.

Intersection geometrics may be revised in conjunction with each subsequent applicable Subarea Plan, if consistent with the traffic study. More detailed infrastructure facility locations will be located as part of each applicable Subarea Plan.

Water & Wastewater Conveyance Facilities:

Exhibits 6 and 7 depict the location of proposed facilities for domestic and non-domestic water, respectively, which would include four domestic water reservoirs, three non-domestic water reservoirs and the installation of water mains for both domestic and non-domestic water located predominately within future. One of the domestic water reservoir sites is located easterly of the development area boundary within the open space (Habitat Reserve) area, as previously addressed by FEIR 589. All other reservoirs and water conveyance facilities would be located within the development areas, with no impacts beyond those identified for the development areas.

Exhibit 8 depicts the location of proposed wastewater facilities, which would include distribution and collection lines internal to the Planning Areas and two sewer lift stations is anticipated, one in the southwesterly portion of Planning Area 3 and the other in the westerly portion of Planning Area 4. Impacts associated with these main facilities have been previously analyzed in FEIR 589 and an Addendum to FEIR 589 and EIR 584 for Chiquita Canyon Water facilities.

Storm Drain Facilities and Outfalls:

Consistent with the Master Plan of Drainage, new storm drains and outfalls would be constructed in conjunction with the development of Planning Areas 3 and 4. The location of these facilities is depicted in Exhibit 9, including:

- 11 outfalls to San Juan Creek.
- 1 outfall to Gobernadora Canyon

The PA-3 & 4 Master Area Plan/Subarea Plans approval relies on the April 2013, County approved Comprehensive Regional Stormwater Plan, Ranch Plan Planned Community, Runoff Management Plan (CRSP ROMP) San Juan Creek Watershed. Due to the magnitude of the project area, phasing of development ROMP and drainage for PA3 and 4 will be identified after approval of the Master Area Plan with the submittal of more detailed plans, as County policy deferral of Master Area Plan approval by Planning Commission. As a result, subsequent and more detailed ROMP studies will be developed at the level of Tentative Map approvals prior to Rough Grade Plan approvals. This would address refinements for defining specific land use, grading, and phasing of both development for PA3 and 4, together with updated phasing to existing condition of Regional ROMP document.

The proposed water quality facilities associated with Planning Areas 3 and 4, as depicted on Exhibit 10, have been sized to retain runoff volume from the 85th percentile, 24-hour design storm for the developed area tributary to each proposed outfall. Outfalls that do not discharge to the San Juan Creek floodplain are also designed to achieve the flow duration control standard for hydromodification control. No hydromodification is required of facilities which drain directly into a major drainage channel such as San Juan Creek (see the Master Area Plan Water Quality Management Plan for reference).

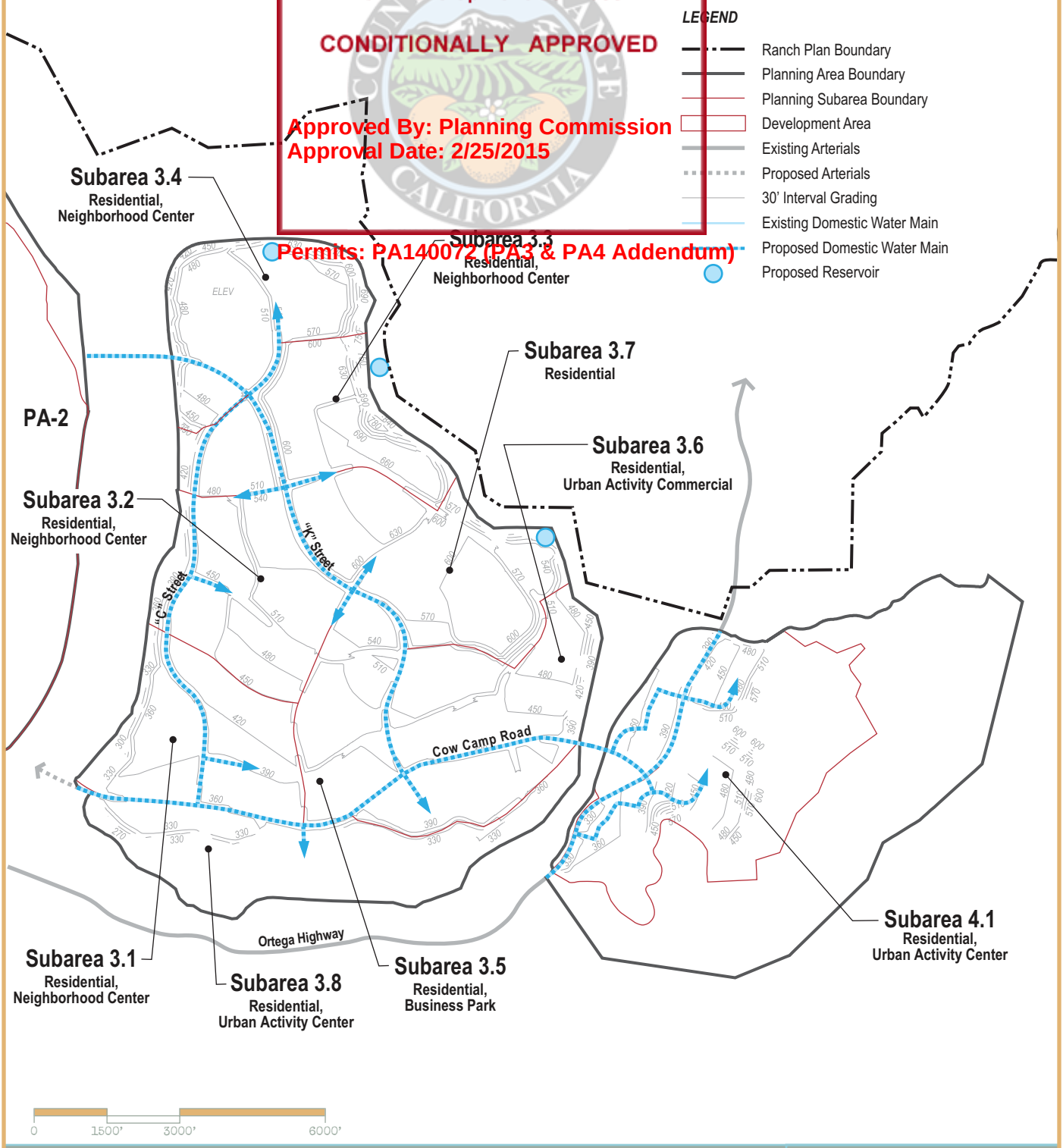
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



MASTER AREA PLAN
CONCEPTUAL DOMESTIC WATER SYSTEM

Ranch Plan Planned Community

Exhibit: 6

N

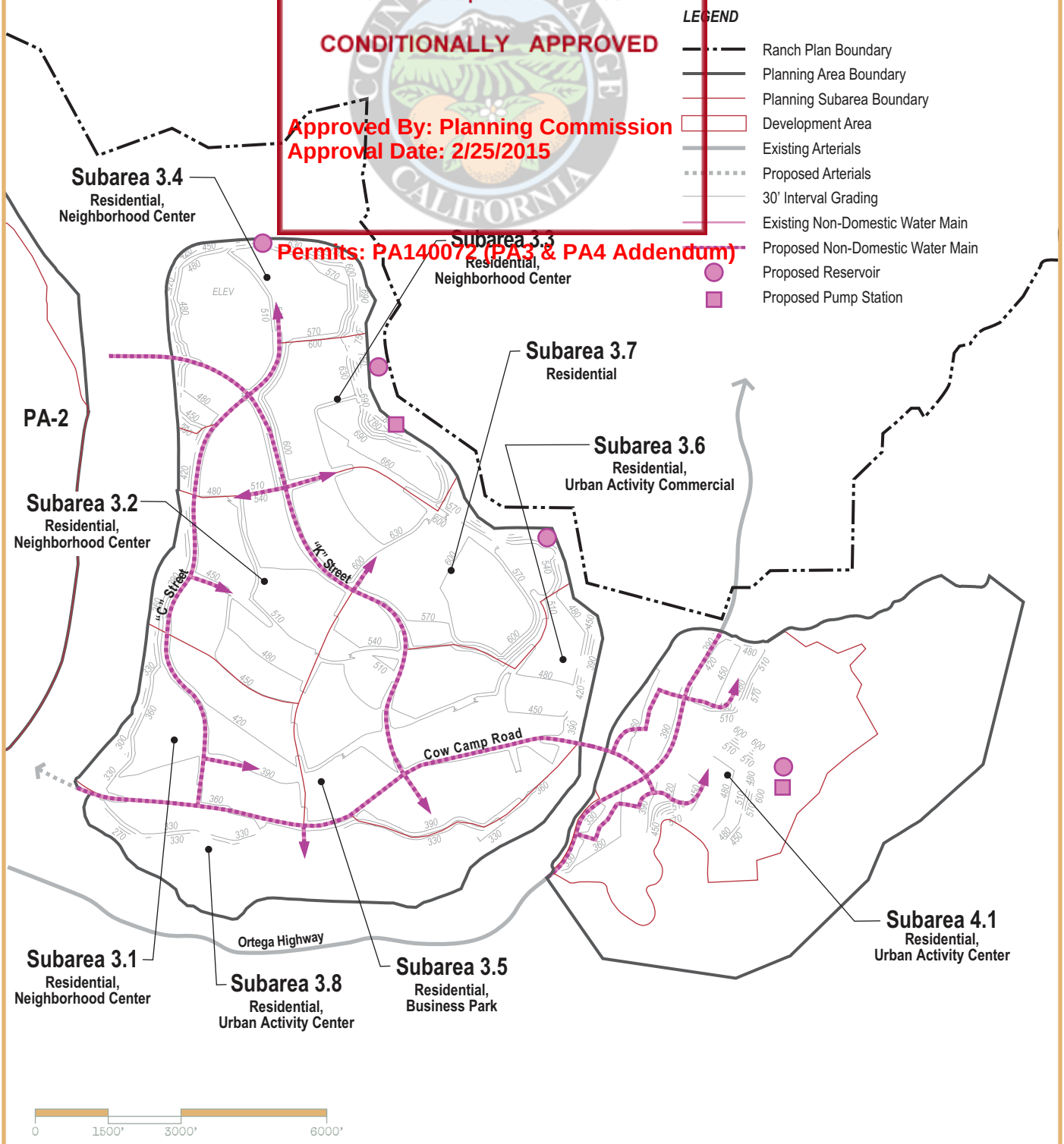
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



MASTER AREA PLAN
CONCEPTUAL NON-DOMESTIC WATER SYSTEM

Ranch Plan Planned Community

Exhibit: 7

N

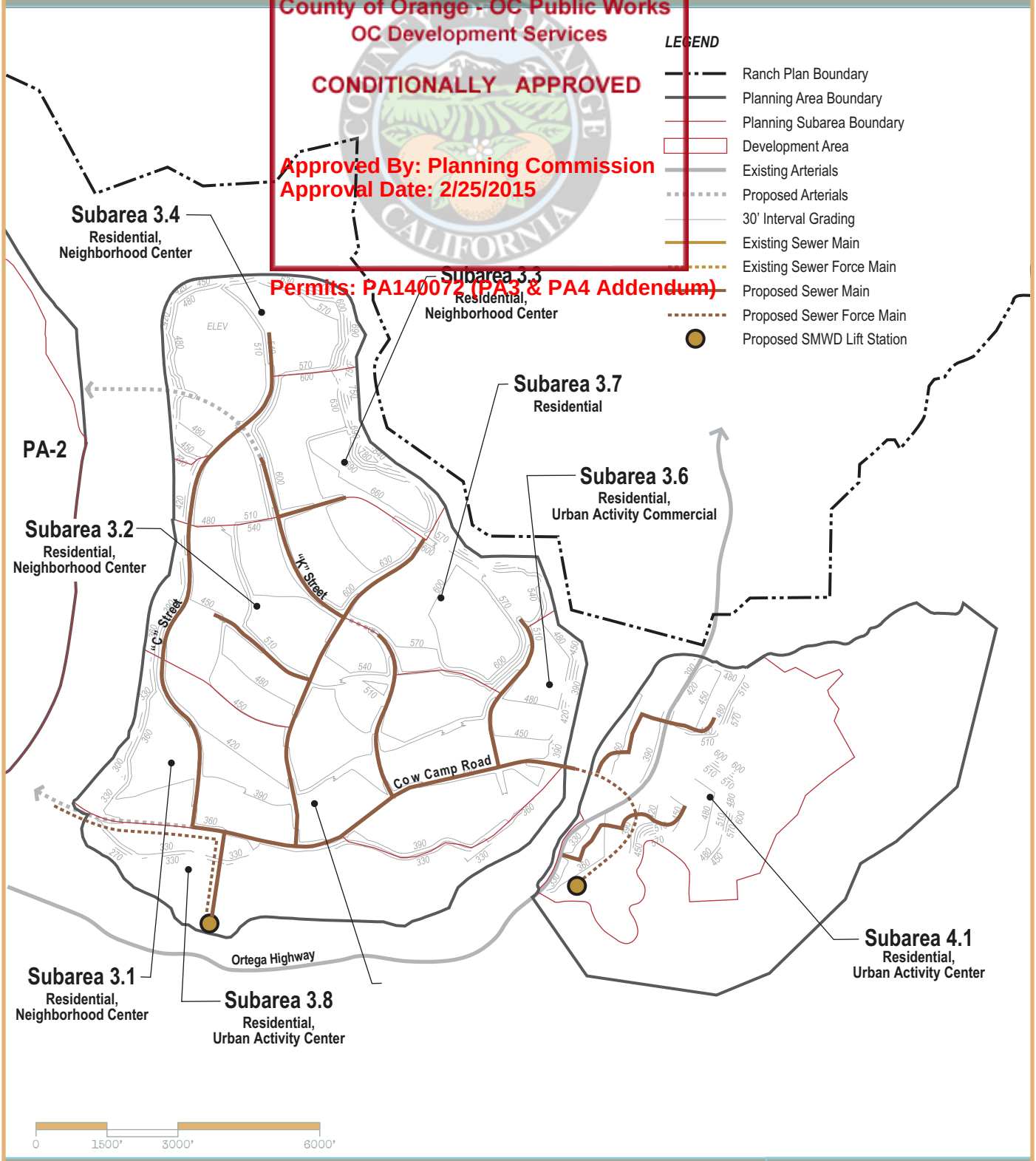
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



MASTER AREA PLAN
PRELIMINARY WASTEWATER SYSTEM

Ranch Plan Planned Community

Exhibit: 8

N

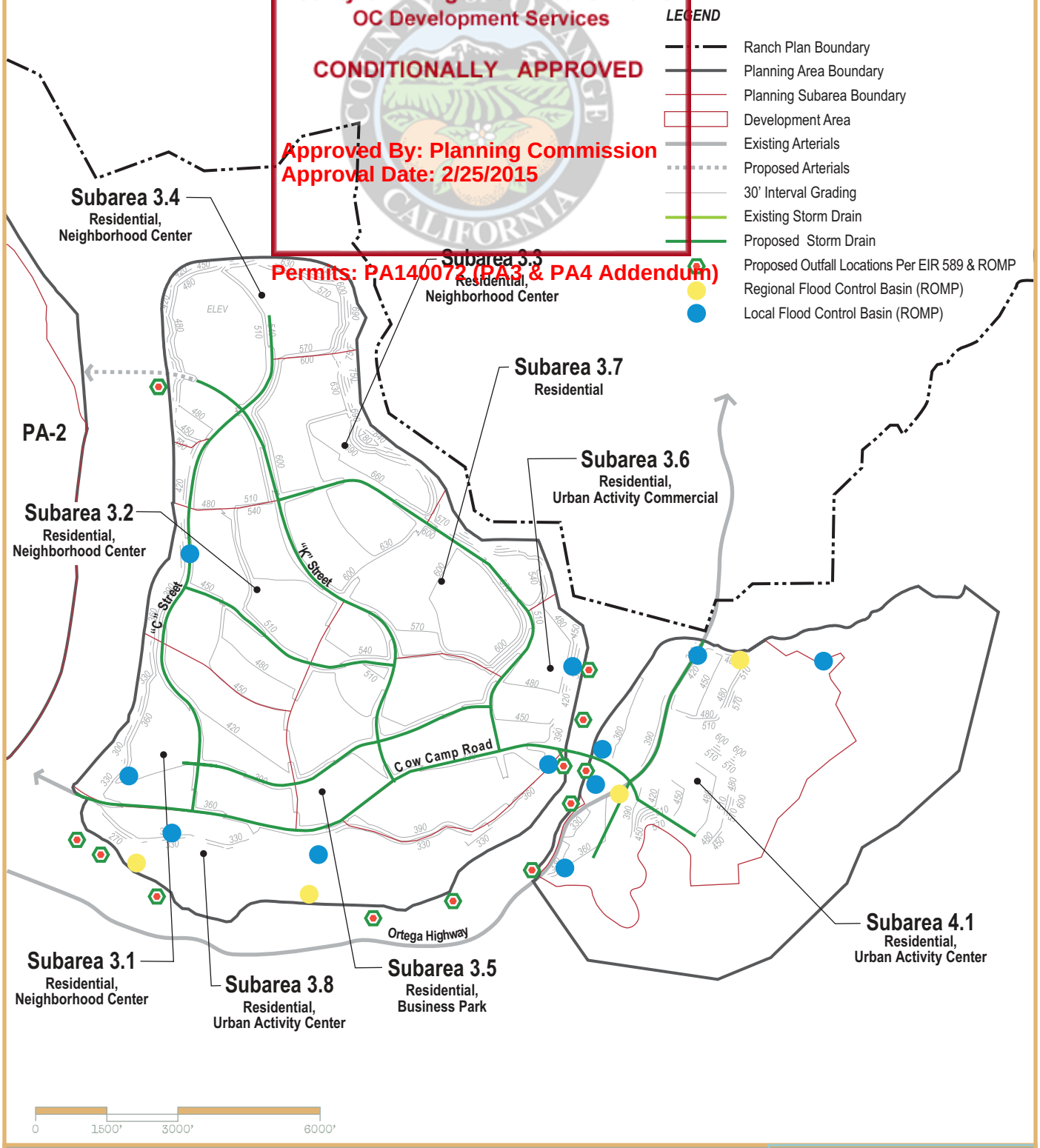
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



MASTER AREA PLAN
PRELIMINARY STORM DRAINAGE SYSTEM

Ranch Plan Planned Community

Exhibit: 9

N

3.5 Master Trail and Bikeway Implementation Plan:

Final Program EIR 589, Mitigation Measure 4.12-1 requires that:

> "In conjunction with approval of the first Master Area Plan, the applicant shall develop a Master Trail and Bikeways Implementation Plan for the Ranch Plan that would establish viable routes for trails and bikeways to provide connectivity to community trails and bikeways in adjacent developments and with existing and proposed recreational facilities. The Master Trail and Bikeways Implementation Plan shall meet with the approval by the [Director, OC Planning] in consultation with the [Manager, OC Parks]."

In satisfaction of this mitigation measure, a Master Trail and Bikeways Plan was approved by the County in 2011. The location of Master Trail and Bikeway facilities will be per the approved September 2011 Master Trail and Bikeways Implementation Plan (Implementation Plan). Within Planning Areas 3 and 4 (see Exhibit 11), the following facilities are to be provided as specified in the Implementation Plan:

- San Juan Creek Class I Bikeway proposed along the northern side of San Juan Creek.
- Community Trail "X", which provides linkage as a designated regional riding and hiking trail, constructed with PA3, but only after County constructs the portion of trail westerly of Trail "X" known as Wagon Wheel Trail connecting with General Thomas F. Riley Wilderness Park.
- Community Trail "Z" is to be implemented with PA3, but only after County constructs the portion of trail westerly of Trail "X" known as Wagon Wheel Trail connecting with General Thomas F. Riley Wilderness Park.

3.6 Agricultural And Other Existing And On-Going Uses:

PC Program Text General Regulation 16 and Section III.H address how existing ranch infrastructure facilities may be maintained in place and/or relocated. Exhibit 12 identifies the existing location of all current agricultural and other existing and on-going uses within Planning Areas 3 and 4, as required by PC Program Text Section II.B.3.a.5. Agricultural and other existing and on-going uses within PA3-4 are limited to grazing, cropland and citrus trees.

3.7 Compatibility with Caspers Wilderness Park:

PC Program Text General Regulation 21 and 22 generally relate to the compatibility of development with Caspers Wilderness Park. General Regulation 21 requires that exterior lighting adjacent to Caspers be designed and located to confine direct rays to the premises, and parking lots and lighting within PA4 and the eastern edge of PA3 shall minimized refractive light into surrounding neighborhoods and into the night sky. This compatibility will be met through each project's compliance with County Standard Condition LG01 (Light and Glare), as specified by the December 13, 2013 PC Program Text Guidance Document.

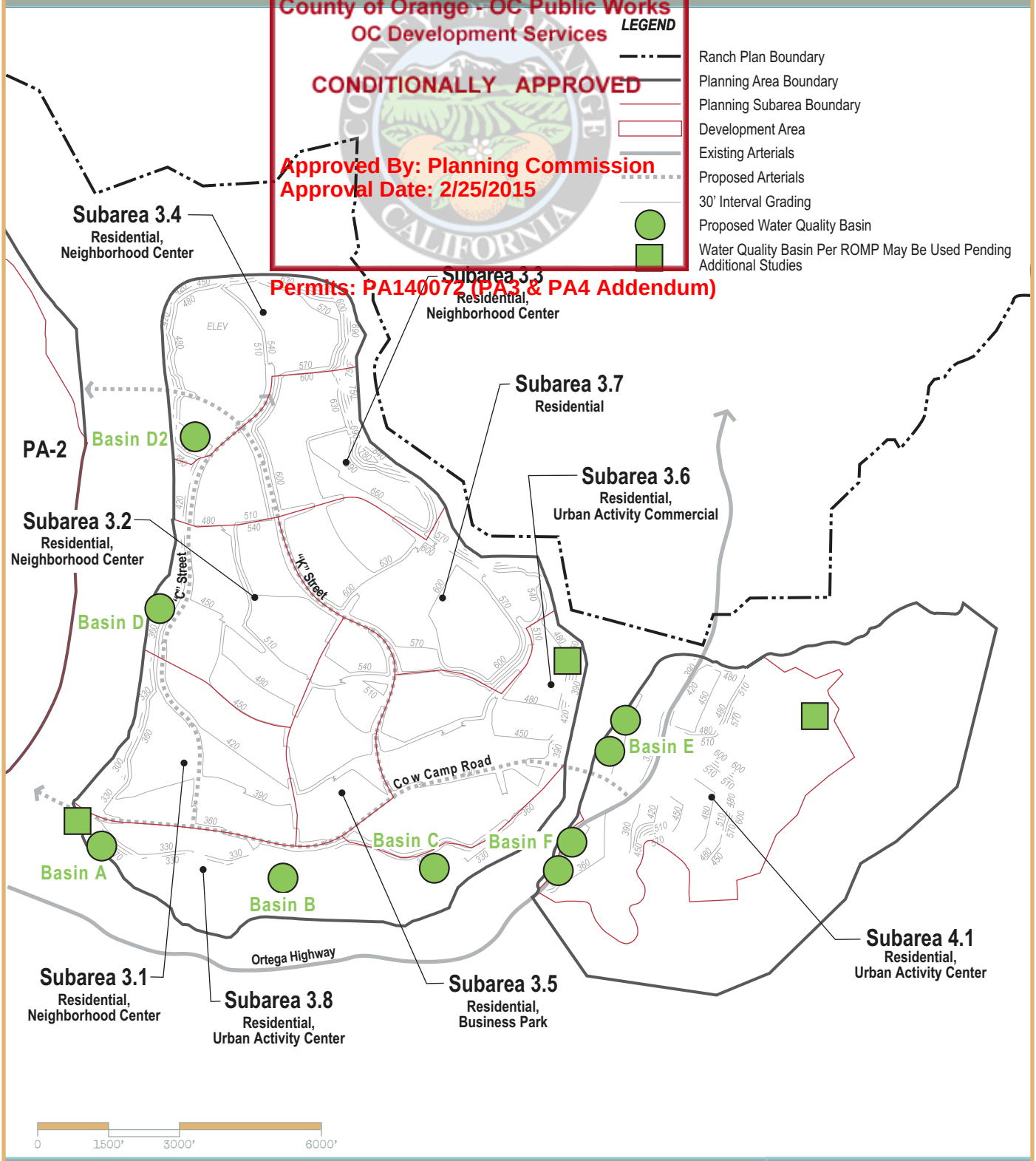
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



MASTER AREA PLAN
PRELIMINARY WATER QUALITY SYSTEM

Ranch Plan Planned Community

Exhibit: 10

N

Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

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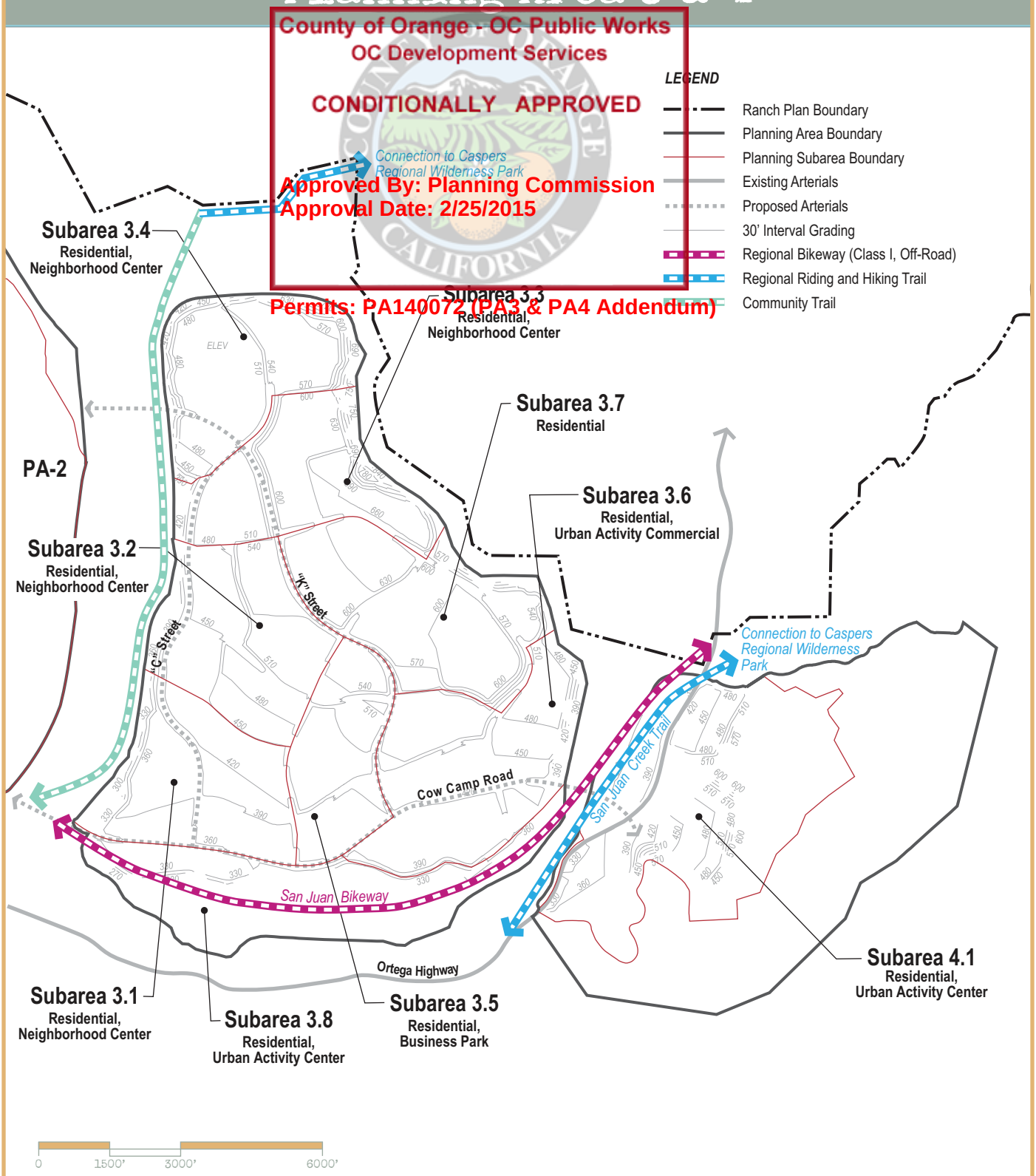


Planning Area 3 & 4
TRAILS AND BIKEWAYS CONCEPT
Ranch Plan Planned Community

Exhibit: 11

N

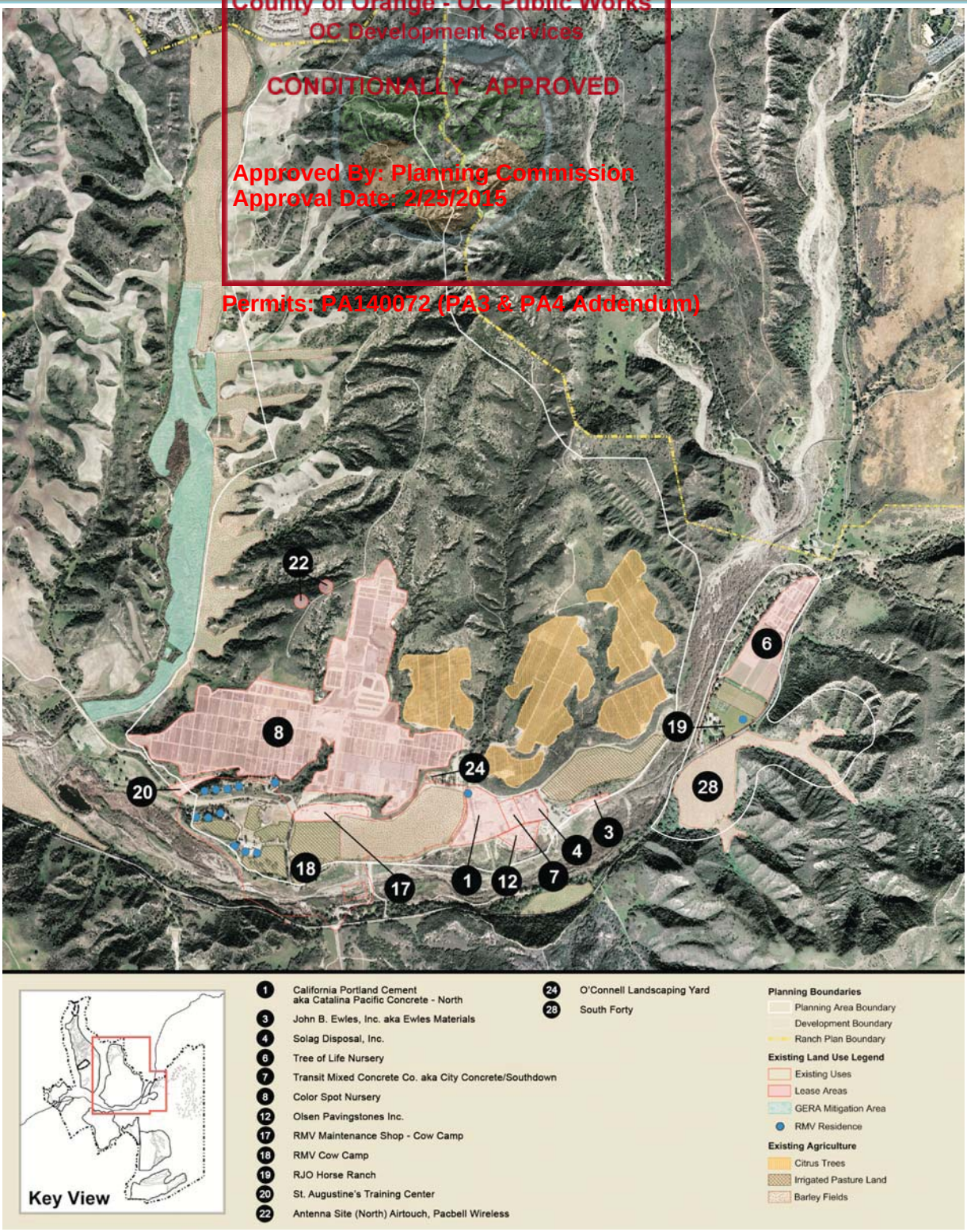
Planning Area 3 & 4

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)



AGRICULTURAL AND OTHER EXISTING ON-GOING USES

Exhibit: 12

Ranch Plan Planned Community

Not To Scale

N

General Regulation 22 requires a broad color palette be provided for the exterior walls and roofing materials of future homes and businesses with a specific emphasis on roofing materials visible from Caspers Regional Park to ensure on-going compatibility with the natural surroundings. This compatibility will be ensured when Rancho Mission Viejo builders submit their Site Development Permits and/or construction plans to the County or Orange for approval.

4. MASTER AREA PLAN REQUIREMENTS

4.1 Ranch Plan PC Program Text Requirements

The Ranch Plan Planned Community Zoning (PC Program Text) was approved by the Orange County Board of Supervisors on November 8, 2004. This Planning Areas 3 and 4 Master Area Plan, and all Ranch Plan Master Area Plans, must comply with the following specific requirements in Section I and II of the Ranch Plan PC Program Text:

<u>PC Program Text Section I. General Provisions & Conditions of Approval</u>

A. NCCP / HCP Planning Guidelines, Condition of Approval No. 3 (Section I.C, page 7)

> 3. *Area Plans for Planning Areas 1 through 9, including Planning Reserve areas and Planning Area 10 (Open Space) shall utilize the recommendations of the draft NCCP/HCP Planning Guidelines (prepared by NCCP/SAMP Working Group, April 2003) developed for the Southern Subregion, Orange County, California and draft Watershed and Sub-Basin Planning Principles (prepared by NCCP/SAMP Working Group, February 2003) developed for the San Juan/Western San Mateo Watersheds, Orange County, California.*

As described in Final Program EIR 589 (Section 4.9 Biological Resources and the biological alternative analysis in FEIR 589 Appendix M), each sub-basin (and therefore each development Planning Area, inclusive of Planning Areas 3 and 4) is in compliance with the abovementioned Watershed Planning Principles.

B. Fire Protection Program, Condition of Approval No. 8 (Section I.C, page 8) and Final Program EIR 589 Mitigation Measure Nos. 4.5.1 and 4.5.2

> 8. *Prior to the approval of the first Master Area Plan, the applicant shall obtain Orange County Fire Authority approval of a Ranch Plan Fire Protection Program, per the requirements of Section II.D hereof, including a Planned Community-wide Fuel Modification Plan. If adaptive management tools (grazing, prescribed fires, etc.) for controlling the growth of vegetation surrounding Ranch Plan development are not successful and vegetation transitions from Fuel Model 2 (FM2) to Fuel Model 4 (FM4), as classified by the BEHAVE Fire Behavior Fuel Modeling System, OCFA may opt to require Fuel*

Modification zone widths based on the BEHAVE model anticipated flame lengths plus 20 feet for defensible space.

The Orange County Fire Authority (OCFA) was the approval authority for the July 2007 Ranch Plan Fire Protection Program which satisfies this requirement for the entirety of the Ranch Plan Area. OCFA has approved the updated Preliminary Fuel Modification Plan for PA3-4 Master Area Plan per the Ranch Plan Fire Protection Program Condition of Approval No. 3/5).

C. Runoff Management Plan (except PA-1) & Master Plan of Drainage, Condition of Approval No. 4 (Section I.C, page 7) and Final Program EIR 589 Mitigation Measures No. 4.5-1 and 4.5-2

4. *Prior to the approval of the first Master Area Plan, with the exception of Planning Area 1, the applicant shall:*

   a. *Prepare a Runoff Management Plan (ROMP) satisfactory to Manager, Flood Control Division and Manager, Watershed and Coastal Resources Division.*

   b. *Prepare a Master Plan of Drainage (MPD) satisfactory to Manager, Flood Control Division and Manager, Watershed and Coastal Resources Division showing all flood control and storm drain features within the affected watershed(s).*

The Ranch-wide ROMP and PA3-4 MPD have been submitted for approval prior to approval of the PA3-4 Master Area Plan.

D. Open Space Agreement. Conditions of Approval #9 (Section I.C, page 8) and Final Program EIR 589 Project Design Features (PDF) 4.9-1 and 4.9-2

9. *Prior to the approval of the first Master Area Plan, the landowner shall enter into an agreement with the County regarding the 16,915-acre RMV Open Space.*

Condition 9, above, has been satisfied per the July 25, 2006 Open Space Agreement between the landowner and County, which occurred prior to the July 26, 2006 approval of the first Master Area Plan. Dedicated gross open space acreage associated with Planning Areas 3 and 4 will include 627 total acres of permanent open space reserve. (15 within the PA3 boundary, and 612-gross acres within the PA4 boundary) In addition, the Open Space agreement results in additional permanent open space dedications to the Reserve external to PA3& 4 within Planning Area 10. Both internal and external open space will be phased with development of individual Subareas.

<u>PC Program Text Section II. Implementation Procedures</u>

The Master Area Plan content requirements are found in the approved Ranch Plan PC Program Text Section II.B.3.a, pages 14-15, as listed below in *italics*. Following each

PC Program Text requirement are specific notes on how this Master Area Plan is in compliance:

1) *Legal description (metes and bounds) of the overall Planning Area boundary and graphic depiction of each Planning Subarea.*

   See Attachment 1, Planning Areas 3 and 4 Development Boundaries (Huitt-Zollars, dated January 20, 2015).

2) *The general location, acreage and type of land use for each Planning Subarea.*

   See Section 3.2 above and refer to Exhibit 4 and Table 2.

3) *Proposed maximum number of dwelling units for each Planning Subarea.*

   See Section 3.2 above and refer to Exhibit 4 and Table 2.

4) *Proposed maximum number of gross and net acres for non-residential land uses, including community facilities and service stations to be located within Neighborhood Centers, Urban Activity Centers and/or Business Parks.*

   See Section 3.2 above and refer to Exhibit 4 and Table 2.

5) *A listing of agricultural and other existing and on-going uses, per Section III.H. [PC Program Text], and consistent with [PC Program Text] General Regulation 16.*

   See Section 3.2 & 3.6 above and refer to Exhibit 12.

6) *Estimated acres of park, recreation and other open space uses will be provided in accordance with [PC Program Text] General Regulation No. 18, and the provisions of the Orange County Local Park Code as contained in the Park Implementation Plan for the Ranch Plan PC Area.*

   See Section 3.2 above and refer to Exhibit 4 and Table 2. The acreage of public parkland proposed in Planning Areas 3 and 4 far exceeds the 29 acres of projected by the July 7, 2014 Ranch Plan Local Park Implementation Plan. When an applicant exceeds the LPIP acreages, it does not require an amendment to the document. However, the LPIP is to be updated by RMV and approved by the Subdivision Committee periodically to accurate reflect as-built acreages.

7) *Identification of applicable project design features, mitigation measures and Development Agreement stipulations unique to the Planning Area.*

   See Section 3.2 above and refer to Exhibit 4 and the Regulation Compliance Matrix.

8) *Other relevant programs, policies and guidelines contained in the Ranch Plan PC, as may be required for consideration, together with a description of how they are being implemented by the Area Plan.*

Refer to the Planning Areas 3 and 4 Regulation Compliance Matrix (separate submittal) for all applicable requirements and provisions.

9) *A Traffic Analysis that supplements the Final Program EIR 589 traffic study (Austin Foust Associates, Inc., May 2004) shall be submitted for review (per Mitigation Measure 4.6-2) and approval by the Director, PDS. The traffic analysis shall include:*

   a) *An evaluation of how any proposed refinements to [the Ranch Plan] circulation system and/or milestones remain in substantial compliance with appropriate Development Agreement obligations and Final Program EIR 589 mitigation measures.*

   b) *Average Daily Trips generated by uses proposed within the Planning Area, as distributed onto the surrounding circulation system (both within the Ranch Plan PC Area, and in the surrounding vicinity) including the peak hour characteristics of those trips.*

   Refer to the Planning Areas 3 and 4 Traffic Analysis (separate submission) for a full evaluation per “a” and “b” above relating to Planning Areas 3 and 4.

10) *Phasing of infrastructure for the entire planning area, including arterial highway locations (including secondary and collector arterials, if appropriate and known), sewer, storm drainage and a Runoff Management Plan (ROMP), Master Plan of Drainage (MPD), including the location of water quality facilities.*

   See Section 3.4 above and refer to Exhibits 5 through 10.

11) *A broad color palette shall be provided for the exterior walls and roofing materials of future homes and businesses. Specific emphasis shall be placed on roofing materials visible from Caspers Regional Park to ensure on-going compatibility with the natural surroundings.*

   See Section 3.7 above.

12) *Demonstrate compliance with OCFA Ranch Plan Fire Protection Program, including an updated Preliminary Fuel Modification Plan, per [PC Program Text] Condition of Approval 8. (also required by Final EIR 589, Mitigation Measures 4.15-1 and 4.15-3).*

   See Section 4.1.B. above and refer to Ranch Plan Fire Protection Program

13) *Annual Monitoring Report framework.*

   A Ranch Plan Planned Community Annual Monitoring Report framework was approved by the Director, RDMD (predecessor to OC Public Works) on February 19, 2008. The 2013 AMR has been submitted in compliance with this requirement.

14) *Preliminary conceptual grading at 30-foot contours.*

   See Section 3.2 above and refer to Exhibit 4.

i. *The Planning Commission shall approve each Master Area Plan for Planning Areas 2, 6, 7 and 8 per a finding ascertaining whether the applicable Planning Reserve remains in effect. If so, the Master Area Plan shall be approved per a condition of approval restricting development until the Planning Reserve designation is lifted.*

Not applicable. The Planning Reserve concept was abandoned per the 2005 Resource Organization Settlement Agreement (ROSA).

ii. *Special consideration of Planning Area 4 shall be per [PC Program Text] General Regulations 21 and 22.*

See Section 3.7 above.

4.2 Other Regulatory Compliance Requirements:

In conjunction with the approval of The Ranch Plan, the County Board of Supervisors adopted a Mitigation Monitoring and Reporting Program (MMRP) pursuant to Public Resources Code Section 21081.6. The MMRP included all the project design features (PDF), standard conditions (SC) and mitigation measures (MM) that were adopted in conjunction with approval of the project. In addition, there are a number of other compliance measures that apply to the project that also serve to reduce environmental impacts. These include provisions from the following:

- Development Agreement requirements
- Planned Community Zoning Regulations/Conditions
- South County Roadway Improvement Program (SCRIP) requirements
- Litigation Settlement Agreement requirements
- Service Provider Agreement requirements

Recognizing the number of conditions that apply to the Ranch Plan, a program for monitoring their implementation has been developed. The Mitigation and Regulation Compliance Matrix recites and categorizes all of the Project's mitigations (from the MMRP), conditions and other project requirements adopted with the initial approving actions and agreements as shown on Exhibit 3 (Ranch Plan Planning Process). Over time, the Regulation Compliance Matrix may be supplemented with added requirements as more detailed plans and programs are approved for the Ranch Plan Project. The Regulation Compliance Matrix represents a single source of the Project's requirements that will be maintained and available for application to subsequent entitlement plans. The program allows for the sorting of the measures to determine which measures at applicable to each portion of the Ranch Plan (i.e., by Planning Area), as well as at each level of entitlement.

Specifically, two Final EIR 589 Mitigation Measures that are required to be addressed as part of the Master Area Plan are as follows:

- MM 4.7-2: With the submittal of each Master Area Plan, the project applicant shall identify locations where alternative fueling facilities could be sited.

  Two service stations are anticipated within Planning Areas 3 and 4, both along Cow Camp Road, consistent with Ranch Plan Planned Community

Development Map (PC Program Text, Exhibit 6). Neighborhood Electrical Vehicle (NEV) charging stations are anticipated in Planning Areas 3 and 4.

- MM 4.7-3 (Regulation Compliance Matrix Item #109): With the submittal of each Master Area Plan, the project applicant shall identify how shade trees can be incorporated into parking lot designs (to reduce evaporative emissions from parked vehicles); where shade trees can be sited (to reduce summer cooling needs); and how shade trees would be incorporated into bicycle and pedestrian path design.

  Shade trees within parking lots are anticipated, with plans to be finalized as part of appropriate site development applications for non-residential uses.

- MM 4.7-3 (Regulation Compliance Matrix Item #110): As a part of each Master Area Plan, the applicant shall identify how the use of light-colored roof materials and paint to reflect heat to the extent feasible has been incorporated into the design plans

  As implemented in PAs 1 and 2, the means of ensuring this technique is incorporated is the requirement that "Prior to issuance of building permits, the applicant shall identify how the use of light-colored roof materials and paint to reflect heat to the extent feasible has been incorporated into the design plans.

- MM 4.14-14 (Regulation Compliance Matrix Item #198): The Master Area Plan prepared for those Planning Areas containing oil wells (Planning Areas 3 and 9) shall graphically depict the location of all oil wells. Prior to issuance of building permits for those locations with oil wells, the applicant shall submit verification that final building plans have undergone review by the Department of Conservation, Division of Oil, Gas, and Geothermal Resources and remedial action in compliance with well abandonment procedures has been completed.

  Two "wildcat" explorations wells in PA3 were both abandoned as dry holes that never produced oil or had any oil shows while drilling.

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

Permits: PA140072 (PA3 & PA4 Addendum)

APPENDIX F

TRAFFIC REPORT

REVIEWED FOR CODE COMPLIANCE

THESE PLANS AND DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN COMPLIANCE WITH THE APPLICABLE JURISDICTION CODE REQUIREMENTS. ISSUANCE OF A PERMIT IS RECOMMENDED SUBJECT TO APPROVAL BY OTHER DEPARTMENTS AND ANY NOTED CONDITIONS. THIS APPROVAL DOES NOT RELIEVE THE ENGINEER OF RECORD OF THEIR RESPONSIBILITY TO PREPARE THE PLANS, SPECIFICATIONS, MAPS, AND OTHER RECORD DOCUMENTS PER CURRENT CODES AND APPLICABLE STANDARDS OF PRACTICE.

CHARLES ABBOTT ASSOCIATES, INC

Signature: Date: March 19, 2015

PA140072

County of Orange - OC Public Works
OC Development Services

CONDITIONALLY APPROVED

Approved By: Planning Commission
Approval Date: 2/25/2015

PA 3-4 Area Plan Traffic Study

Permits: PA140072 (PA3 & PA4 Addendum)

Prepared for:
Rancho Mission Viejo

Prepared by:
Stantec Consulting Services Inc.

February 23, 2015

Sign-off Sheet

County of Orange - OC Public Works
OC Development Services
CONDITIONALLY APPROVED
Approved By: Planning Commission
Approval Date: 2/25/2015
Permits: PA140072 (PA3 & PA4 Addendum)

This document entitled PA 3-4 Area Plan Traffic Study was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Rancho Mission Viejo (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by Cassandra Carlin
(signature)

Cassandra Carlin, ENV SP

Reviewed by _____
(signature)

Daryl Zerfass, TE

REGISTERED PROFESSIONAL ENGINEER
DARYL J. ZERFASS
No.1824
exp 6/30/15
TRAFFIC
STATE OF CALIFORNIA

Stantec

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PA 3-4 AREA PLAN
TRAFFIC STUDY
February 2015

INTRODUCTION

This report provides traffic information for Planning Areas 3 and 4 (PA 3-4) of the Ranch Plan. It has been prepared as a technical document in support of the area plan submittal to the County of Orange for these two planning areas.

1.1 SCOPE AND METHODOLOGY

Requirements for Area Plan traffic studies are summarized in the Ranch Plan Development Agreement (DA) and related documents. These specify that the traffic study has two major objectives. The first is to verify that the area plan is consistent with the original Ranch Plan EIR as modified by the Settlement Agreement. The second is to evaluate the timing of the traffic improvements outlined in the South County Roadway Improvement Program (SCRIP) in relation to the submitted area plan.

The first of these involves a tabular comparison of land use and corresponding trip generation. The original tabular summary from the EIR is essentially a benchmark to compare against the previous and current area plans, as measured cumulatively. The primary metric as far as traffic is concerned is external peak hour trips by direction.

The second part of the analysis focuses on the timing of SCRIP improvements. It addresses those intersections that were identified in the EIR as requiring mitigation and which have not yet been improved in accordance with the SCRIP. Traffic forecasts have been made for these selected locations and an analysis made of their traffic performance in relation to those forecasts. Depending on the findings, changes are proposed for the timing of SCRIP improvements in relation to land use development in the submitted area plan.

1.2 PA3-4 LAND USE AND TRIP GENERATION

Table 1 shows the land uses and associated trip generation for PA3-4 as contained in the Area Plan. It includes a total of 7,500 dwelling units, separated into “market rate” and “age qualified” categories. The non-residential uses include 450,000 square feet of commercial building area, and 2,950,000 square feet of “urban activity center” (UAC). Land uses in the UAC areas range from office and Business Park uses to light industrial and warehousing. The first part of the table describes land use types, which is specific term applied to land uses that are then aggregated into a general category.

Total trip generation for the PA3-4 Area Plan is estimated at 93,735 daily tripends (it should be noted that the term “tripends” is typically used to describe trip generation, since it separately counts each end of an actual “trip”. A tripend is essentially a driveway count of all vehicles entering and leaving any land use. A “trip” has two “tripends”, one at each end of the trip).

Table 1 Trip Generation and Land Use Summary for PA's 3 and 4

LU Type	Amount	Trip Type	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	AM Peak Hour %ADT	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	PM Peak Hour %ADT	ADT
SFD DU	2,990 DU	Rate	0.19	0.56	0.75		0.64	0.37	1.01		9.57
		Trips	568	1,674	2,242	7.8%	1,914	1,106	3,020	10.6%	28,614
SFA DU	2,010 DU	Rate	0.15	0.49	0.64		0.52	0.30	0.82		8.11
		Trips	302	985	1,287	7.9%	1,045	603	1,648	10.1%	16,301
AQ Residential	2,500 DU	Rate	0.08	0.14	0.22		0.16	0.11	0.27		3.71
		Trips	200	350	550	5.9%	400	275	675	7.3%	9,275
Commercial	145 TSF	Rate	0.53	0.34	0.87		1.75	1.90	3.65		40.12
		Trips	77	49	126	2.2%	254	276	530	9.1%	5,817
Business Park	305 TSF	Rate	1.19	0.21	1.40		0.33	0.93	1.26		12.44
		Trips	363	64	427	11.3%	101	284	385	10.1%	3,794
UAC	2,950 TSF	Rate	0.68	0.13	0.81		0.25	0.69	0.94		9.01
		Trips	2,006	384	2,390	9.0%	738	2,036	2,774	10.4%	26,580
Schools	2,600 STU	Rate	0.25	0.20	0.45		0.07	0.08	0.15		1.29
		Trips	650	520	1,170	34.9%	182	208	390	11.6%	3,354
Total			**4,166**	**4,026**	**8,192**	**8.7%**	**4,634**	**4,788**	**9,422**	**10.1%**	**93,735**

LU Category	Amount	Units	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	AM Peak Hour %ADT	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	PM Peak Hour %ADT	ADT
MR Residential	5,000	DU	870	2,659	3,529	7.9%	2,959	1,709	4,668	10.4%	44,915
AQ Residential	2,500	DU	200	350	550	5.9%	400	275	675	7.3%	9,275
Comm./UAC	3,400	TSF	2,446	497	2,943	8.1%	1,093	2,596	3,689	10.2%	36,191
Schools	2,600	Students	650	520	1,170	34.9%	182	208	390	11.6%	3,354
TOTAL			**4,166**	**4,026**	**8,192**	**8.7%**	**4,634**	**4,788**	**9,422**	**10.1%**	**93,735**

Abbreviations: SFD – Single Family Detached Residential
SFA – Single Family Attached Residential
AQ – Age Qualified Residential (age restricted housing)
UAC – Urban Activity Center
Comm. – Commercial Shopping Center
MR – Market Rate Housing (comprising Single Family Detached and Attached Housing)
DU – Dwelling Units

Source: ITE (9th Ed.) Trip Rates; refer to Appendix A (Table A-5 for detailed information).

The peak hour trips by direction are also shown here, representing the key measure for traffic analysis purposes, since traffic impacts are identified using peak hour intersection performance.

1.3 TRIP GENERATION VERIFICATION

The trip generation verification involves a comparison between the original EIR tripends and those from the currently approved and proposed Ranch Plan development. It essentially verifies that the area plan approvals (PA 1-2) to date, plus those proposed for PA3-4 do not cause those original tripend totals (referred to here as the "trip ceiling") to be exceeded.

Land uses and associated trip generation for all of the Ranch Plan were given in the original EIR traffic report. Appendix A in this report summarizes that information as background to this traffic study. As a result of the agreement that followed the Ranch Plan approval, PA8 east of San Clemente became isolated from the remaining planning areas (the connecting roadway was deleted as were land uses located along the connecting roadway). Hence, PA's 1 through 5 generate project traffic on the primary study area roadway system. The trip verification for EIR consistency purposes is therefore made for those five planning areas.

Appendix A describes the EIR trip generation for PA's 1 through 5, which is derived by subtracting the PA8 land uses and trips from the Ranch Plan totals. The approved land uses plus proposed equivalents for PA's 1 through 4 are then compared with those EIR totals. The EIR 589 allowed for 183,000 average daily trips (ADT) in total trip generation for the Ranch. For PA's 1 and 2, area plan approvals have resulted in specific land use entitlements for these two areas. Hence, in this trip verification the approved area plan land uses are used for PA's 1 and 2, and for PA's 3 and 4, the proposed area plan land uses and trip generation as presented above are used. The Master Area Plan for PA-5 will address the trip generation capacity at a future point in time.

Table 2 (on the following page) shows the results of the trip generation comparison when the total tripends for PA's 1 through 4 are compared to the EIR trip ceiling for PA's 1 through 5. As shown, the PA1-4 trip generation totals are below the trip ceiling totals. Most importantly, the external peak hour trips are below the EIR consistency threshold. Since area plan approval is not being sought for PA5 at this time, that planning area has been excluded from this comparison table and the remainder of the total approved trips is in PA5, so that this report addresses buildout of the Ranch Plan. The development potential in PA5 is relatively low because of physical constraints, and the available ADT is sufficient for up to 1800 AQ units, more than may in fact be feasible. As shown in the comparison table, trips are available for PA5 when that is processed.

An analysis has been performed on arterial highways circulating local and region traffic to and from PA-3 and 4 using trips generated with build-out of the Ranch Plan. "K" Street and Cow Camp Road are included with this analysis. While "K" Street is designated as a 4 lane Secondary Arterial Highway, it is recommended to be a 2 lane roadways since it will maintain a LOS of D or better. Also, while Cow Camp Road from C Street to Ortega Highway is designated as a 4 lane Primary Arterial Highway, it is recommended to be a 2 lane roadway in the segment that crosses San Juan Creek, just east of the intersection with Ortega Highway since it will maintain a LOS of D or better. The analysis is included in Appendix D.

1.4 SCRIP EVALUATION

Information regarding the SCRIP can be found in Appendix B. Included there is a status summary of all the improvements in the SCRIP program. At this time many have been completed and others are currently in progress by the various entities within the jurisdiction where the improvement is located.

Table 2 Trip Generation by Planning Areas

Area	Trip Type	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	AM Peak Hour %ADT	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	PM Peak Hour %ADT	ADT
PA1	Total	383	591	974	5.9%	931	708	1,639	10.0%	16,420
PA2	Total	991	1,478	2,469	5.7%	2,162	1,745	3,907	9.1%	42,953
PA3-4	Total	4,166	4,026	8,192	8.7%	4,634	4,788	9,422	10.1%	93,735
TOTAL	Total	5,540	6,095	11,635	7.6%	7,727	7,241	14,968	9.8%	153,108
EIR TOTALS	Total	5,819	6,648	12,467	7.8%	8,065	7,593	15,658	9.8%	159,879
Internal/External	Internal	2,258	2,258	4,516	6.2%	3,434	3,434	6,868	9.4%	73,033
	External	3,282	3,837	7,119	8.9%	4,293	3,807	8,100	10.1%	80,075
	Total	5,540	6,095	11,635	7.6%	7,727	7,241	14,968	9.8%	153,108
Percent Internal Tripends		40.8%	37.0%	38.8%		44.4%	47.4%	45.9%		47.7%
EIR External	Total	3,412	4,241	7,653	9.1%	4,534	4,062	8,596	10.2%	84,173
Difference	Total	130	404	534		241	255	496		4,098

Source: ITE (9th Ed.) Trip Rates; refer to Appendix A (Table A-5 for detailed information).
Abbreviations: PA – Planning Area

This analysis addresses the five major study area intersections that show a "to be constructed" status after Rancho Mission Viejo (RMV) pays the corresponding SCRIP fee, it is the responsibility for the local agency to implement the project. The SCRIP has timelines associated with the implementation of improvements for each. Those timelines are expressed as levels of development rather than years, and this traffic study examines each intersection in relation to its timeline. The intent is to verify each intersection's future performance and determine whether the stated timeline needs to be moved forward to maintain level of service standards on the study area roadway system.

The traffic forecasts used in this analysis are for 2035, and represent a long range cumulative scenario in which PA's 1 through 5 are fully built out along with the associated regional roadway additions (La Pata Avenue gap closure, F Street, and Cow Camp Road to Ortega Highway). Although PA5 does not to need to be represented in this analysis, using the full cumulative buildout setting enables the intersection performance to be analyzed in a long range context, and the implementation timelines evaluated accordingly.

As in the original traffic study, intersection performance is evaluated using designated level of service (LOS) standards. These, together with the procedures used to measure LOS are

summarized in Table 3. Intersection performance is measured by peak hour intersection capacity utilization (ICU) values. Applicable LOS standards are those of the individual jurisdictions in which the intersections are located.

Table 3 Arterial Intersection Performance Criteria

V/C Calculation Methodology

Level of service based on peak hour intersection capacity utilization (ICU) values calculated using the following:

Saturation Flow Rate: 1,600 vehicles / hour / lane for City of San Clemente intersections, 1,700 vehicles /hour / lane for all other study area jurisdictions.

Clearance Interval: 0.00 for City of San Clemente intersections, 0.05 for all other study area jurisdictions.

Performance Standards

Level of Service D (peak hour ICU less than or equal to 0.90) for locations other than Congestion Management Plan (CMP) intersections.

Appendix C provides existing and future traffic volumes for the five intersections analyzed here, and gives the peak hour ICU calculations for those volumes in relation to the existing lane configurations. The results are listed here in Table 4. The 2035 values given here represent future conditions in which the Ranch Plan is built out and the surrounding area is built out to the extent described in the Orange County Projections (OCP). Traffic volumes for the Cow Camp Road (CCR) and the K Street/A Street are provided in the F Street PR Report that is referenced in Appendix D.

Table 4 ICU Summary

	Existing (2014)				2035			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Location	ICU	LOS	ICU	LOS	ICU	LOS	ICU	LOS
4. Felipe & Oso Pkwy	.71	C	.73	C	.82	D	.87	D
5. Antonio Pkwy & Oso Pkwy	.56	A	.73	C	.71	C	.79	C
12. Antonio & Crown Valley Pkwy	.54	A	.57	A	.70	B	.75	C
27. Rancho Viejo & Ortega	.62	B	.69	B	.78	C	.91	E
28. La Novia & Ortega	.56	A	.65	B	.69	B	.82	D

The timelines given in the SCRIP for implementation of transportation improvements are given in terms of equivalent dwelling units (EDU) for development of the Ranch Plan. The EDUs are expressed as equivalents of single family detached (SFD) dwelling units, and recognize that the

various types of dwelling units (single/multi-family, MR/AQ) have different trip generation characteristics. Those that generate less trips than a SFD are thereby assigned a lower EDU value. Non-residential uses are included in the EDU accounting, with square feet of building area being used as the unit of equivalency. The EDU range (i.e., 1,000 – 5,000) references the range of the residential units that can be built before the referenced improvement needs to be built.

Table 5 summarizes the findings of the intersection performance in terms of the SCRIP improvements and their timing. Some discussion of these results follows.

Table 5 SCRIP Improvements

Location	Jurisdiction	Improvement(s)	EDU	Comments
4. Felipe Rd & Oso Pkwy	MV	2nd Southbound Left Turn Lane	1 – 1,000	Improvement not needed until 10,000 EDU
5. Antonio Pkwy & Oso	CO	3rd Northbound Left turn lane 4th Southbound Thru Lane 4th Eastbound Thru Lane	2,501 – 5000	Needed before buildout of PA2 if F Street is not constructed
12. Antonio Pkwy & Crown Valley Pkwy	CO	Restripe Southbound Lanes Add Northbound Right Turn Lane	2501 – 5000	Could be deferred
27. Rancho Viejo & Ortega Hwy	SJC	Restripe Southbound lanes Add Northbound Right Turn Lane	2501 – 5000	No change needed
28. La Novia & Ortega Hwy	SJC	2nd Westbound Left Turn Lane	2501 - 5000	Could be deferred
EDU – Equivalent Dwelling Units				

1.4.1 Felipe & Oso

Since the SCRIP was prepared, the City of Mission Viejo has carried out an update to its General Plan and land use projections in the City have changed, along the long range demographics in the surrounding area. The 2035 traffic forecasts provided here show adequate capacity at this intersection without the improvements. Since conditions can change in the future, the improvement should not be eliminated from the SCRIP, but the fair share contribution from the Ranch Plan would be paid in accordance with the Settlement Agreement between the City of Mission Viejo and RMV, executed in 2005.

1.4.2 Antonio and Oso

This intersection shows adequate performance for 2035 conditions. However, the construction of F Street (assumed for 2035) results in considerable traffic diversion from Antonio Parkway and hence, from this intersection. The traffic report for the PA2 Area Plan analyzed this intersection for buildout of PA2 without F Street, and found a PM ICU increase of .19 from existing. Based on the most recent existing count, this would result in an ICU of .92 by buildout of PA2 without F Street.

Construction plans have been prepared for this intersection and actual construction is awaiting full funding. The findings of this traffic study indicate that priority should be given to pursuing the implementation of the planned improvements at this location.

1.4.3 Antonio and Crown Valley Parkway

This intersection is shown to have adequate LOS through 2035. Should the County implement improvements within this time frame, the fair share contribution noted in the SCRIP as before 5,000 EDU could be made at that time.

1.4.4 Rancho Viejo and Ortega

The 2035 ICU's for this intersection show LOS E for the PM peak hour. The planned improvements will be the joint responsibility of Caltrans and the City of San Juan Capistrano. Given that the ICU value is forecast to only just exceed the performance threshold by 2035, the need for those improvements will be likely be beyond the 5,000 EDU timeline for the Ranch Plan SCRIP's contribution. Hence this location can be monitored over time and the fair share contribution made at the time improvements are implemented.

1.4.5 La Novia and Ortega

This intersection is shown to have adequate LOS through 2035. Should the City and Caltrans implement improvements within this time frame, the fair share contribution noted in the SCRIP could be made at that time (i.e., 5,000 EDU timeline).

REFERENCES

1. The Ranch Plan Development Planning Area 1 – Traffic Evaluation, Stantec Consulting Services, January 28, 2015

2. Ranch Plan Planning Area 2 Traffic Forecast Data, Stantec Consulting Services, May 2013

Appendix A TRIP GENERATION

This appendix provides background information on the trip generation data given in this report. Data for the Ranch Plan approval in the EIR traffic report is summarized and used to derive the tripend ceiling used here in the comparative analysis. Trip generation assumptions for PA3-4 are also discussed.

A.1 EIR TRIP GENERATION

Table A-1 lists the total Ranch Plan trip generation as presented in the original traffic impact study. For traffic analyses in the vicinity of Planning Area 3 (PA3) and PA4, PA8 located southeast of San Clemente has essentially no interaction with the remaining planning areas (1 through 5). Hence the trip generation ceiling comparison for EIR consistency purposes is based on the tripend totals for PA's 1 through 5.

Table A-2 shows the trip generation for PA8, and Table A-3 lists the resulting trip generation for PA's 1 – 5 in which PA8 has been subtracted out of the Ranch Plan totals. The tripend totals from this table are used in the trip verification section of the report.

The trip generation rates used for PA3-4 are based on the trip rates given in the Institute of Traffic Engineers (ITE) Trip Generation Manual. The Market Rate (MR) residential rates are consistent with the rates used in the PA1 and PA2 Area Plan traffic reports, and are referenced in those documents. For the Age Qualified (AQ) units, which are age-restricted housing units and the non-residential uses, Table A-4 summarizes the rates for the non-residential uses including the derivation of the blended rates for the Urban Activity Center (UAC) land use category. The UAC rates assume a mix of light industrial, warehouse, retail, and business park uses, with the amount of each land use type being listed in this table.

A.2 NON-RESIDENTIAL LAND USE MIX

The trip rates for non-residential land uses vary from a high of 42.7 daily trips per thousand square feet (TSF) rate for the shopping center land use type to a low of 3.6 for the warehouse land use type. In this report, the trip generation forecasts for PA3-4 are based on a representative mix of land use types, some of which are given in the Area Plan submittal (Commercial, Business Park, And UAC) while others such as light industrial and warehousing have been estimated as part of deriving a blended trip rate for the UAC land use category. As actual land use development occurs, the amount of each specific land will likely vary from this estimated mix, and of concern in this regard is the potential for the trip generation estimates presented here to be exceeded.

To address this issue, it is suggested that the trip generation given here for non-residential land uses be used as a trip cap for PA3-4. The ADT values generally mirror the PM peak hour values,

Appendix A Trip Generation
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Table A- 1 EIR Trip Generation Summary

TRIPENDS BY LU TYPE

LU	AMOUNT	UNITS	AM PEAK HOUR				PM PEAK HOUR				ADT
			In	Out	Total	%ADT	In	Out	Total	%ADT	
Single Family - Detached	4,212	DU	528	2,634	3,162	8.2%	2,495	1,192	3,687	9.6%	38,544
Single Family - Attached	2,808	DU	293	1,548	1,841	8.5%	1,423	641	2,064	9.6%	21,560
Senior Housing	5,360	DU	330	991	1,321	7.0%	1,092	688	1,780	9.5%	18,739
Senior Apartments	640	DU	39	119	158	7.1%	130	83	213	9.5%	2,237
Apartments	980	DU	89	445	534	8.4%	416	192	608	9.6%	6,335
General Commercial	750	TSF	1,413	663	2,076	6.1%	1,522	1,879	3,401	10.0%	34,118
Specialty Retail	230	TSF	377	172	549	6.1%	394	499	893	10.0%	8,936
R&D/Business Park	3,660	TSF	2,496	573	3,069	8.6%	1,074	2,692	3,766	10.6%	35,501
Office	560	TSF	466	115	581	8.3%	223	516	739	10.5%	7,013
Golf Course	1,057	ACRES	153	47	200	7.0%	104	189	293	10.3%	2,854
Elementary/Middle School	4,200	STU.	540	52	592	11.2%	144	249	393	7.4%	5,284
High School	900	STU.	116	11	127	11.2%	31	53	84	7.4%	1,132
Resort Hotel	250	ROOMS	61	18	79	7.3%	38	74	112	10.3%	1,085
TOTAL	**Total**		**6,901**	**7,388**	**14,289**	**7.8%**	**9,086**	**8,947**	**18,033**	**9.8%**	**183,338**

INTERNAL/EXTERNAL TRIPENDS BY LU CATEGORY

LAND USE	Int/Ext TYPE	LU	AM PEAK HOUR				PM PEAK HOUR				ADT
			In	Out	Total	%ADT	In	Out	Total	%ADT	
Residential	Internal	14,000 DU	258	2,235	2,493	9.5%	1,694	550	2,244	8.6%	26,225
	External		1,021	3,502	4,523	7.4%	3,862	2,246	6,108	10.0%	61,190
	Total		1,279	5,737	7,016	8.0%	5,556	2,796	8,352	9.6%	87,415
Percent Internal Tripends			20.2%	39.0%	35.5%		30.5%	19.7%	26.9%		30.0%
Commercial/School	Internal	1,000 TSF	1,628	175	1,803	4.3%	1,699	2,111	3,810	9.1%	42,050
	External		818	723	1,541	20.8%	392	569	961	13.0%	7,420
	Total		2,446	898	3,344	6.8%	2,091	2,680	4,771	9.6%	49,470
Percent Internal Tripends			66.6%	19.5%	53.9%		81.3%	78.8%	79.9%		85.0%
Business	Internal	4,220 TSF	598	73	671	5.1%	292	1,025	1,317	10.1%	13,100
	External		2,578	680	3,258	9.8%	1,147	2,446	3,593	10.8%	33,353
	Total		3,176	753	3,929	8.5%	1,439	3,471	4,910	10.6%	46,453
Percent Internal Tripends			18.8%	9.7%	17.1%		20.3%	29.5%	26.8%		28.2%
Total	Internal		2,484	2,483	4,967	6.1%	3,685	3,686	7,371	9.1%	81,375
	External		4,417	4,905	9,322	9.1%	5,401	5,261	10,662	10.5%	101,963
	Total		6,901	7,388	14,289	7.8%	9,086	8,947	18,033	9.8%	183,338
Percent Internal Tripends			36.0%	33.6%	34.8%		40.6%	41.2%	40.9%		44.0%

Source: Ranch Plan EIR Traffic Study, Tables 3-1 and 3-2

Stantec

Appendix A Trip Generation
February 2015

Table A- 2 PA8 Land Use and Trip Generation Summary

LU	AMOUNT	UNITS	AM PEAK HOUR				PM PEAK HOUR				ADT
			In	Out	Total	%ADT	In	Out	Total	%ADT	
Single Family - Detached	300	DU	88	137	225	8.2%	178	85	263	9.6%	2,745
Single Family - Attached	200	DU	21	110	131	8.5%	101	46	147	9.6%	1,536
Senior Housing	600	DU	37	111	148	7.1%	122	77	199	9.5%	2,098
Senior Apartments	300	DU	18	56	74	7.1%	61	39	100	9.5%	1,049
Apartments	0	DU	0	0	0		0	0	0		0
General Commercial	100	TSF	188	89	277	6.1%	203	250	453	10.0%	4,549
Specialty Retail	0	TSF	0	0	0		0	0	0		0
R&D/Business Park	1,000	TSF	682	157	839	8.6%	293	736	1,029	10.6%	9,700
Office	0	TSF	0	0	0		0	0	0		0
Golf Course	258	ACRES	37	12	49	7.0%	25	47	72	10.3%	697
Elementary/Middle School	0	STU.	0	0	0		0	0	0		0
High School	0	STU.	0	0	0		0	0	0		0
Resort Hotel	250	ROOMS	61	18	79	7.3%	38	74	112	10.3%	1,085
TOTAL	**Total**		**1,082**	**740**	**1,822**	**7.8%**	**1,021**	**1,354**	**2,375**	**10.1%**	**23,459**

Appendix A Trip Generation
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Table A- 3 PA's 1 – 5 Land Use and Trip Generation Summary

TRIPENDS BY LU TYPE

LU	AMOUNT	UNITS	AM PEAK HOUR In	Out	Total	%ADT	PM PEAK HOUR In	Out	Total	%ADT	ADT
Single Family - Detached	3,912	DU	490	2,447	2,937	8.2%	2,317	1,107	3,424	9.6%	35,799
Single Family - Attached	2,608	DU	272	1,438	1,710	8.5%	1,322	595	1,917	9.6%	20,024
Senior Housing	4,760	DU	293	880	1,173	7.0%	970	611	1,581	9.5%	16,641
Senior Apartments	340	DU	21	63	84	7.1%	69	44	113	9.5%	1,188
Apartments	980	DU	89	445	534	8.4%	416	192	608	9.6%	6,335
General Commercial	650	TSF	1,225	574	1,799	6.1%	1,319	1,629	2,948	10.0%	29,569
Specialty Retail	230	TSF	377	172	549	6.1%	394	499	893	10.0%	8,936
R&D/Business Park	2,660	TSF	1,814	416	2,230	8.6%	781	1,956	2,737	10.6%	25,801
Office	560	TSF	466	115	581	8.3%	223	516	739	10.5%	7,013
Golf Course	799	ACRES	116	35	151	7.0%	79	142	221	10.2%	2,157
Elementary/Middle School	4,200	STU.	540	52	592	11.2%	144	249	393	7.4%	5,284
High School	900	STU.	116	11	127	11.2%	31	53	84	7.4%	1,132
Resort Hotel	0	ROOMS	0	0	0		0	0	0		0
TOTAL	**Total**		**5,819**	**6,648**	**12,467**	**7.8%**	**8,065**	**7,593**	**15,658**	**9.8%**	**159,879**

INTERNAL/EXTERNAL TRIPENDS BY LU CATEGORY

LAND USE	Int/Ext TYPE	LU	AM PEAK HOUR In	Out	Total	%ADT	PM PEAK HOUR In	Out	Total	%ADT	ADT
Residential	Internal	14,000	225	2,095	2,320	9.4%	1,630	678	2,308	9.3%	24,796
	External		940	3,178	4,118	7.5%	3,464	1,871	5,335	9.7%	55,191
	Total		1,165	5,273	6,438	8.0%	5,094	2,549	7,643	9.6%	79,987
Percent Internal Tripends		DU	19.3%	39.7%	36.0%		32.0%	26.6%	30.2%		31.0%
Commercial/School	Internal		1,486	122	1,608	4.2%	1,587	1,906	3,493	9.1%	38,411
	External		772	687	1,459	22.4%	301	524	825	12.7%	6,510
	Total		2,258	809	3,067	6.8%	1,888	2,430	4,318	9.6%	44,921
Percent Internal Tripends		TSF	65.8%	15.1%	52.4%		84.0%	78.4%	80.9%		85.5%
Business	Internal		696	190	886	7.1%	314	947	1,261	10.1%	12,499
	External		1,700	376	2,076	9.2%	769	1,667	2,436	10.8%	22,472
	Total		2,396	532	2,962	8.5%	1,083	2,453	3,697	10.6%	34,971
Percent Internal Tripends		TSF	29.0%	35.7%	29.9%		29.0%	38.6%	34.1%		35.7%
Total	Internal		2,407	2,407	4,814	6.4%	3,531	3,531	7,062	9.3%	75,706
	External		3,412	4,241	7,653	9.1%	4,534	4,062	8,596	10.2%	84,173
	Total		5,819	6,648	12,467	7.8%	8,065	7,593	15,658	9.8%	159,879
Percent Internal Tripends			41.4%	36.2%	38.6%		43.8%	46.5%	45.1%		47.4%

Table A-4 Trip Rate Summary for Urban Activity Center (UAC)

ITE Code	Land Use Type	ADT	AM Peak Hour			PM Peak Hour			Factor*
			In	Out	Total	In	Out	Total	
110	Light Industrial	6.87	88%	12%	0.92	12%	88%	0.97	0.25
150	Warehouse	3.56	79%	21%	0.3	25%	75%	0.32	0.40
820	Shopping Center	42.7	62%	38%	0.96	48%	52%	3.71	0.05
710	General Office Building	11.03	88%	12%	1.56	17%	83%	1.49	
520	Elementary School	1.29	55%	45%	0.45	49%	51%	0.15	
770	Business Park	12.44	85%	15%	1.4	26%	74%	1.26	0.30
	Blended UAC	9.01	0.68	0.13	0.82	0.25	0.69	0.93	1.00
Weighting Factor for UAC Blended Rates									

Appendix A Trip Generation
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Table A-5 Trip Rate Summary

ITE Code	LU Type	ADT	AM Peak Hour			PM Peak Hour			Factor*
			In	Out	Total	In	Out	Total	
251	Senior Adult Housing - Detached	3.68	0.35	0.65	0.22	0.61	0.39	0.27	
110	Light Industrial	6.87	88%	12%	0.92	12%	88%	0.97	0.25
150	Warehouse	3.56	79%	21%	0.3	25%	75%	0.32	0.40
820	Shopping Center	42.7	62%	38%	0.96	48%	52%	3.71	0.05
710	General Office Building	11.03	88%	12%	1.56	17%	83%	1.49	
520	Elementary School	1.29	55%	45%	0.45	49%	51%	0.15	
770	Business Park	12.44	85%	15%	1.4	26%	74%	1.26	0.30
	Blended UAC	9.01	0.68	0.13	0.82	0.25	0.69	0.93	1.00

*Weighting Factor for UAC Blended based on a mix of following ITE rates: Shopping Center, Office, Light Industrial and Business Park

which are the most critical as far as traffic is concerned. Hence the ADT total of 36,190 tripends can serve as a trip cap for non-residential development in PA3-4.

A.3 INTERNAL TRIP CAPTURE

The internal trip capture for the Ranch Plan was derived from the original traffic modeling carried out for project approval. The trip distribution pattern and the internal capture are consistent with the Orange County Transportation Analysis Model (OCTAM). In accordance with the consistency requirements for traffic modeling in Orange County, that distribution was imported into the South County Sub-Area Model (SCSAM), the tool used for preparing traffic forecasts for the original traffic study. The trip distribution is used for current analyses, with minor modifications made when warranted by land use changes in specific areas. The internal capture is sensitive to the residential/non-residential balance and to size of area. For example, the internal capture for PA1 is low because of the low ratio between jobs/housing mix, hence the internal capture rate for PA3, 4 and 8 is higher because of the higher job/housing ratio (i.e., the Ranch Plan with PA1 and PA2 subtracted) is generally slightly higher than for the Ranch Plan as a whole. As discussed previously, the area plan approval is not being sought for PA5 at this time, that planning area has been excluded from this comparison; however, the trip totals for PA5 are included in this total Ranch Plan analysis as the total trips for the Ranch cannot exceed the approved EIR total. This will be addressed in the future as the planning starts for PA5.

Appendix B SCRIP INFORMATION

This appendix summarizes pertinent features of the South County Roadway Improvement Program (SCRIP). The second part of the analysis in this traffic study pertains to the timing of SCRIP improvements, particularly those that have not yet been implemented.

Table B-1 summarizes the SCRIP improvements and shows the current status of each. Many improvements have already been implemented, and others are in process under programs being undertaken by jurisdictions within the study area. Those listed here as "to be constructed" are analyzed in this report. The purpose of that analysis is to determine if the implementation timing as given in the SCRIP is adequate to enable traffic level of service (LOS) standards to be maintained.

Table B-1 SCRIP Summary

Location/Jurisdictions	Description of Improvements	Status of Improvement
City of Mission Viejo		
I-5: Saddleback Connector	Improvements per Caltrans design plans/PSR.	Future improvement.
Crown Valley Pkwy / I-5 Bridge widening	Improvements per Caltrans design plans.	Construction complete.
Oso Pkwy / I-5 Southbound Ramp	Improvements per Caltrans design plans.	Construction complete.
Oso Pkwy Widening (I-5 to Marguerite Pkwy)	Addition of a fourth lane in each direction.	Construction complete.
Felipe Rd / Oso Pkwy Intersection	Addition of a second southbound left-turn lane on Felipe Rd.	Future improvement.
Crown Valley Pkwy / Marguerite Pkwy Intersection	Addition of a second westbound left-turn lane, a fourth through lane, and a right-turn lane on Crown Valley Pkwy.	Construction complete.
City of San Juan Capistrano		
I-5 / Ortega Hwy Interchange	Improvements per Caltrans/City design plans.	Under construction.
Ortega Hwy context-sensitive design in City	Improvements per Caltrans/City design plans/PSR.	Project in the design phase.

Location/Jurisdictions	Description of Improvements	Status of Improvement
City of Mission Viejo		
Rancho Viejo Rd/Ortega Hwy Intersection	Restripe southbound lanes and add a northbound right-turn lane on Rancho Viejo Rd.	Future improvement.
La Novia Ave/Ortega Hwy Intersection	Addition of a second left-turn lane in the eastbound direction on Ortega Hwy.	Future improvement.
Valle Rd/San Juan Creek Rd Intersection	Improvements per City Nexus program.	Requirement satisfied with recent improvements to the San Juan Creek Rd interchange.
I-5/Junipero Serra Rd	Improvements per Caltrans/City design plans/PSR.	Future improvement.
Camino Capistrano/Del Obispo St	Improvements per City Nexus program.	Maximum feasible improvements have been implemented by City.
City of San Clemente		
I-5/Southbound Ramp at Avenida Pico	Restriping of the southbound off-ramp and modifying the signal per Caltrans design plans/PSR.	Improvements under construction.
Camino Vera Cruz/Avenida Vista Hermosa Intersection	Addition of a second left-turn lane in the southbound direction on Camino Vera Cruz.	Future improvement.
Avenida La Pata/Avenida Vista Hermosa Intersection	–Addition of a southbound free right-turn lane on La Pata. –Addition of second and third eastbound left-turn lanes on Vista Hermosa.	Under contract for construction with the La Pata Ave improvements.

Location/Jurisdictions	Description of Improvements	Status of Improvement
City of Mission Viejo		
City of Laguna Niguel		
Crown Valley Pkwy/Railroad Bridge Improvement	Improvements per City Design.	Requirement may be satisfied as a result of the completed improvements on the I-5/Crown Valley Pkwy interchange.
Crown Valley Pkwy/Forbes Rd	Improvements per City 'Gateway' Project conditions.	Requirement may be satisfied as a result of the completed improvements on the I-5/Crown Valley Pkwy interchange.
Crown Valley Pkwy at Cabot Rd	Improvements per City 'Gateway' Project conditions.	Requirement may be satisfied as a result of the completed improvements on the I-5/Crown Valley Pkwy interchange.
Crown Valley Pkwy/I-5 Bridge widening	Improvements per Caltrans design plans/PSR.	Construction complete.
Avery Pkwy/I-5 Interchange	Improvements per Caltrans/City design plans.	Construction complete.
County Of Orange		
Oso Pkwy Widening: Meandering Trail to Solano	Addition of one lane in each direction.	Construction complete.
La Pata Ave construction and widening from Ortega Hwy to Avenida Vista Hermosa	Addition of one lane on La Pata Ave from Ortega Hwy to the landfill and construction of four lanes from the landfill to Calle Saluda.	Under construction.
Antonio Pkwy Widening: Ladera Ranch to Ortega Hwy	Addition of one lane in each direction and widen the bridge.	Construction complete.
Antonio Pkwy/Oso Pkwy Intersection	Addition of a fourth southbound through lane and a third northbound left-turn lane on Antonio Pkwy. Addition of a fourth through lane in the westbound direction	Project design is 95 percent complete.

Location/Jurisdictions	Description of Improvements	Status of Improvement
City of Mission Viejo		
	on Oso Pkwy.	
Antonio Pkwy/La Pata Ave/Ortega Hwy Intersection	Addition of a second through lane and a free right-turn lane on Antonio Pkwy. Addition of a second northbound left-turn and a second through lane on La Pata Ave. Addition of a second eastbound through lane on Ortega Hwy.	Construction complete.
Antonio Pkwy/Crown Valley Pkwy Intersection	Addition of a second right-turn lane in the eastbound direction on Crown Valley Pkwy. Addition of a third left-turn lane in the northbound direction on Antonio Pkwy.	Project design is 95 percent complete.
Cow Camp Rd	Construction from Antonio Pkwy to Ortega Hwy.	Construction underway, to be completed with development of Planning Areas 3 and 4.

I: Interstate; Caltrans: California Department of Transportation; PSR: Project Study Report

Source: Stantec 2014

Appendix C INTERSECTION ANALYSIS

This appendix provides traffic forecasts, planning considerations, and intersection analysis information presented in this report. Existing count data is presented, followed by 2035 forecasts for the intersections that are addressed in this report. The levels of service (LOS) calculations are then given in the form of intersection capacity utilization (ICU) tables.

C.1 EXISTING AND FUTURE TRAFFIC VOLUMES

The existing average daily traffic (ADT) and peak hour turn movement volumes are based on traffic counts taken in September/October 2014. In some cases, minor adjustments have been made to the raw count data to ensure consistency with the machine count data on each leg of the intersection. Turn movement data is collected manually, usually for one day, and can show considerable variation from day to day. The purpose of the refinements is to derive a representative weekday average.

One location where substantial refinements were made to the existing counts was at the intersection of Ranch Viejo Road and Ortega Highway. The 2014 counts were taken while major construction was underway at the I-5 interchange with Ortega Highway. The low volumes recorded in the counts were thereby adjusted using historical data for this location. Some adjustments were also made to the Ortega Highway intersection with La Novia, in this case only the east-west volumes on Ortega Highway. The adjusted volumes for these two intersections thereby provide a representation of 2014 conditions on this part of Ortega Highway if the interchange construction was not taking place.

The 2035 forecasts are derived from the South County Sub-Area Model (SCSAM). This is a subarea derivative of the Orange County Transportation Analysis Model (OCTAM) which provides the regional consistency context for subarea models such as SCSAM. Key relationships such as County-wide demographic data projections and the geographic trip distribution for the study area and surrounding County area are imported into the SCSAM from the OCTAM parent model.

In the Ranch Plan area, land use data in the SCSAM is consistent with the original Ranch Plan approvals, and was updated recently using data from the PA1 and PA2 Area Plans. Land use planning for PA's 3 and 4 is currently in progress and will lead to area plan submittals at a later time. The approach taken here has been to use the SCSAM post-processing procedure to control the total trip generation for Planning Areas 1 through 5 to that used in the original traffic impact analysis. Since that de facto trip ceiling is an important consideration in land use planning for the individual area plans, this process ensures that the forecasts derived here will not be exceeded when those plans are submitted for approval. The total trip generation for PA's 1 through 5 is shown in Table C-1.

Table C-1 Trip Generation Summary – PA's 1 through 5

AREA	TRIP TYPE	AM PEAK HOUR In	AM PEAK HOUR Out	AM PEAK HOUR Total	AM PEAK HOUR %ADT	PM PEAK HOUR In	PM PEAK HOUR Out	PM PEAK HOUR Total	PM PEAK HOUR %ADT	ADT
PA1	Total	383	591	974	5.9%	931	708	1,639	10.0%	16,420
PA2	Total	991	1,478	2,469	5.7%	2,162	1,745	3,907	9.1%	42,953
PA3, PA4, PA5	Total	4,445	4,579	9,024	9.0%	4,972	5,140	10,112	10.1%	100,506
TOTAL PA1-5	Total	5,819	6,648	12,467	7.8%	8,065	7,593	15,658	9.8%	159,879
TOTAL PA1 - PA5	Internal	2,407	2,407	4,814	6.4%	3,531	3,531	7,062	9.3%	75,706
	External	3,412	4,241	7,653	9.1%	4,534	4,062	8,596	10.2%	84,173
	Total	5,819	6,648	12,467	7.8%	8,065	7,593	15,658	9.8%	159,879
Percent Internal Tripends		41.4%	36.2%	38.6%		43.8%	46.5%	45.1%		47.4%

Note: PA3-5 trip generation is remainder under the trip ceiling after approved totals for PA's 1 and 2

The existing and future volumes at the five intersections are listed in Table C-2. For each intersection the data includes the ADT for the legs of the intersection and the peak hour turn movement volumes.

C.2 LEVEL OF SERVICE CALCULATIONS

The intersection capacity utilization (ICU) calculations worksheets for existing and future conditions at each intersection are given in the following pages. The ICU values are based on existing lane configurations.

Table C-2
INTERSECTION VOLUME SUMMARY

Location	NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
	SBL	SBT	SBR	SB	NB	TOTAL	EBL	EBT	EBR	WB	AB	TOTAL	NBL	NBT	NBR	NB	SB	TOTAL	EBL	EBT	EBR	EB	WB	TOTAL
4. Felipe & Oso																								
Existing																								
Link ADT					13,000						38,000						10,000						38,000	
AM VOLUMES	170	300	240	790	640	1430	90	1520	240	1850	1100	2950	100	190	70	360	580	940	210	860	110	1180	1860	3040
Percent ADT				5.9%	4.8%	10.7%				4.9%	2.9%	7.8%				3.6%	5.8%	9.4%				3.1%	4.9%	8.0%
PM VOLUMES	290	270	120	680	840	1520	80	1470	150	1700	1550	3420	70	390	100	560	470	1030	270	1560	120	1950	1400	3350
Percent ADT				5.2%	6.5%	11.7%				3.9%	5.1%	9.0%				5.6%	4.7%	10.3%				5.1%	3.7%	8.8%
2035 Cumulative																								
Link ADT					16,000						45,000						18,000						54,000	
AM VOLUMES	200	400	330	930	730	1660	100	1910	290	2300	1320	3620	120	240	100	460	710	1170	200	1020	210	1430	2360	3790
Percent ADT				5.8%	4.6%	10.4%				5.1%	2.9%	8.0%				2.6%	3.9%	6.5%				2.6%	4.4%	7.0%
PM VOLUMES	370	190	200	760	980	1740	90	1790	180	1970	2190	4160	90	1120	60	1210	60	1270	360	1770	270	2400	1760	4160
Percent ADT				4.8%	6.2%	11.0%				4.0%	5.3%	9.2%				4.0%	3.1%	7.1%				4.4%	3.3%	7.7%
5. Antonio & Oso																								
Existing																								
Link ADT					35,000						33,000						36,000						38,000	
AM VOLUMES	120	620	760	1500	1270	2770	560	750	210	1520	940	2460	330	580	440	1350	1390	2740	480	380	210	1070	1840	2910
Percent ADT				4.3%	3.6%	7.9%				4.6%	2.8%	7.5%				3.8%	3.9%	7.6%				2.8%	4.8%	7.7%
PM VOLUMES	90	790	520	1400	1370	2770	570	490	50	1110	1410	2520	370	720	420	1510	1780	3290	600	900	420	1920	1380	3300
Percent ADT				4.0%	3.9%	7.9%				3.4%	4.3%	7.6%				4.2%	4.9%	9.1%				5.1%	3.6%	8.7%
2035 Cumulative																								
Link ADT					36,000						39,000						39,000						46,000	
AM VOLUMES	290	750	850	1890	1580	3470	560	990	260	1810	1130	2940	440	660	360	1460	1500	2960	660	480	190	1330	2280	3610
Percent ADT				5.3%	4.4%	9.6%				4.6%	2.9%	7.5%				3.7%	3.8%	7.6%				2.9%	5.0%	7.8%
PM VOLUMES	120	790	810	1720	1750	3470	680	500	140	1320	1670	2990	410	810	430	1650	1930	3580	800	1120	460	2380	1720	4100
Percent ADT				4.8%	4.9%	9.6%				3.4%	4.3%	7.7%				4.2%	4.9%	9.2%				5.2%	3.7%	8.9%
12. Antonio & Crown Valley Parkway																								
Existing																								
Link ADT					35,000						3,000						30,000						21,000	
AM VOLUMES	40	860	330	1230	1330	2560	20	40	30	90	110	200	480	910	10	1400	1160	2560	390	60	280	730	850	1580
Percent ADT				3.5%	3.8%	7.3%				3.0%	3.7%	6.7%				4.7%	3.9%	8.5%				3.5%	4.0%	7.5%
PM VOLUMES	110	920	300	1330	1510	2840	30	60	70	160	230	390	300	910	10	1220	1310	2530	530	110	360	1000	660	1660
Percent ADT				3.8%	4.3%	8.1%				5.3%	7.7%	13.0%				4.1%	4.4%	8.4%				4.8%	3.1%	7.9%
2035 Cumulative																								
Link ADT					39,000						3,000						38,000						21,000	
AM VOLUMES	40	950	430	1420	1520	2940	20	60	20	100	110	210	500	1250	10	1760	1480	3240	250	60	510	820	990	1810
Percent ADT				3.6%	3.9%	7.5%				3.3%	3.7%	7.0%				4.6%	3.9%	8.5%				3.9%	4.7%	8.6%
PM VOLUMES	120	1110	270	1500	1590	3090	30	70	50	150	240	390	460	1060	10	1530	1660	3190	480	110	520	1110	800	1910
Percent ADT				3.8%	4.1%	7.9%				5.0%	8.0%	13.0%				4.0%	4.4%	8.4%				5.3%	3.8%	9.1%
27. Rancho Viejo & Ortega																								
Existing																								
Link ADT					14,000						33,000						13,000						40,000	
AM VOLUMES	180	190	180	550	620	1170	40	1290	290	1620	1220	2840	290	170	40	500	620	1120	160	1000	390	1550	1760	3310
Percent ADT				3.9%	4.4%	8.4%				4.9%	3.7%	8.6%				3.8%	4.8%	8.6%				3.9%	4.4%	8.3%
PM VOLUMES	220	210	240	670	480	1150	40	850	200	1090	1620	2710	310	120	40	470	600	1070	160	1360	350	1870	1400	3270
Percent ADT				4.8%	3.4%	8.2%				3.3%	4.9%	8.2%				3.6%	4.6%	8.2%				4.7%	3.5%	8.2%
2035 Cumulative																								
Link ADT					17,000						47,000						15,000						52,000	
AM VOLUMES	270	240	150	660	750	1410	60	1830	420	2310	1740	4050	320	150	70	540	750	1290	180	1400	450	2030	2300	4330
Percent ADT				3.9%	4.4%	8.3%				4.9%	3.7%	8.6%				3.6%	5.0%	8.6%				3.9%	4.4%	8.3%
PM VOLUMES	450	180	210	840	580	1420	70	1310	180	1560	2280	3840	360	170	70	600	700	1300	230	1760	450	2440	1880	4320
Percent ADT				4.9%	3.4%	8.4%				3.3%	4.9%	8.2%				4.0%	4.7%	8.7%				4.7%	3.6%	8.3%
28. La Novia & Ortega																								
Existing																								
Link ADT					0						33,000						11,000						33,000	
AM VOLUMES	0	0	0	0	0	0	310	1400	0	1710	1150	2860	230	0	250	480	600	1080	0	900	290	1190	1630	2820
Percent ADT										5.2%	3.5%	8.7%				4.4%	5.5%	9.8%				3.6%	4.9%	8.5%
PM VOLUMES	0	0	0	0	0	0	250	870	0	1120	1610	2730	170	0	250	420	480	900	0	1360	230	1590	1040	2630
Percent ADT										3.4%	4.9%	8.3%				3.8%	4.4%	8.2%				4.8%	3.2%	8.0%
2035 Cumulative																								
Link ADT					0						46,000						12,000						47,000	
AM VOLUMES	0	0	0	0	0	0	300	1930	0	2230	1610	3840	250	0	270	520	660	1180	0	1340	360	1700	2180	3880
Percent ADT										4.8%	3.5%	8.3%				4.3%	5.5%	9.8%				3.6%	4.6%	8.3%
PM VOLUMES	0	0	0	0	0	0	240	1350	0	1590	2210	3800	190	0	270	460	530	990	0	1940	290	2230	1540	3770
Percent ADT										3.5%	4.8%	8.3%				3.8%	4.4%	8.3%				4.7%	3.3%	8.0%

4. Felipe Rd & Oso Pkwy

Existing (2014) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	100	.06*	70	.04
NBT	2	3400	190	.06	390	.11*
NBR	1	1700	70	.04	100	.06
SBL	1	1700	170	.10	290	.17*
SBT	2	3400	380	.18*	270	.11
SBR	0	0	40		40	
EBL	1	1700	210	.12*	270	.16*
EBT	3	5100	860	.17	1560	.31
EBR	d	1700	110	.06	120	.07
WBL	1	1700	90	.05	80	.05
WBT	3	5100	1520	.30*	1210	.24*
WBR	d	1700	240	.14	180	.11
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.71**		**.73**

2035 with Existing Lanes

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	120	.07*	120	.07
NBT	2	3400	240	.07	370	.11*
NBR	1	1700	100	.06	230	.14
SBL	1	1700	200	.12	370	.22*
SBT	2	3400	400	.21*	190	.11
SBR	0	0	330		210	.12
EBL	1	1700	200	.12*	360	.21*
EBT	3	5100	1020	.20	1770	.35
EBR	d	1700	210	.12	270	.16
WBL	1	1700	100	.06	90	.05
WBT	3	5100	1910	.37*	1430	.28*
WBR	d	1700	290	.17	260	.15
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.82**		**.87**

27. Rancho Viejo & Ortega

Existing (2014) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	290	.09	310	.09
NBT	1	1700	170	.12*	120	.09*
NBR	0	0	40		40	
SBL	1.5		180		220	
SBT	1.5	5100	190	.11*	210	.13*
SBR	0		180		240	.14
EBL	1	1700	160	.09*	160	.09
EBT	2	3400	1000	.29	1360	.40*
EBR	1	1700	390	.23	350	.21
WBL	1	1700	40	.02	40	.02*
WBT	3	5100	1290	.25*	850	.17
WBR	1	1700	290	.17	200	.12
Clearance Interval				.05*		.05*
Note: Assumes N/S Split Phasing						
TOTAL CAPACITY UTILIZATION				**.62**		**.69**

2035 with Existing Lanes

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	320	.09	360	.11
NBT	1	1700	150	.13*	170	.14*
NBR	0	0	70		70	
SBL	1.5		270		450	
SBT	1.5	5100	240	.13*	180	.16*
SBR	0		150		210	
EBL	1	1700	180	.11*	230	.14
EBT	2	3400	1400	.41	1760	.52*
EBR	1	1700	450	.26	450	.26
WBL	1	1700	60	.04	70	.04*
WBT	3	5100	1830	.36*	1310	.26
WBR	1	1700	420	.25	180	.11
Clearance Interval				.05*		.05*
Note: Assumes N/S Split Phasing						
TOTAL CAPACITY UTILIZATION				**.78**		**.91**

28. La Novia & Ortega

Existing (2014) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	230	.07*	170	.05*
NBT	0	0	0		0	
NBR	1	1700	250	.15	250	.15
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	900	.26*	1360	.40*
EBR	1	1700	290	.17	230	.14
WBL	1	1700	310	.18*	250	.15*
WBT	2	3400	1400	.41	870	.26
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.56**		**.65**

2035 with Existing Lanes

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	250	.07*	190	.06*
NBT	0	0	0		0	
NBR	1	1700	270	.16	270	.16
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	0	0	0		0	
EBT	2	3400	1340	.39	1940	.57*
EBR	1	1700	360	.21	290	.17
WBL	1	1700	300	.18	240	.14*
WBT	2	3400	1930	.57*	1350	.40
WBR	0	0	0		0	
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.69**		**.82**

5. Antonio Pkwy & Oso Pkwy

Existing (2014) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	330	.10*	370	.11*
NBT	3	5100	580	.11	720	.14
NBR	1	1700	440	.26	420	.25
SBL	2	3400	120	.04	90	.03
SBT	3	5100	670	.13*	740	.15*
SBR	f		760		520	
EBL	2	3400	480	.14*	600	.18
EBT	3	5100	380	.07	900	.18*
EBR	1	1700	210	.12	420	.25
WBL	2	3400	560	.16	570	.17*
WBT	3	5100	750	.15*	490	.10
WBR	1	1700	210	.12	50	.03
Right Turn Adjustment					EBR	.07*
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.56** **.73**

2035 with Existing Lanes

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	440	.13*	410	.12*
NBT	3	5100	660	.13	810	.16
NBR	1	1700	360	.21	430	.25
SBL	2	3400	290	.09	120	.04
SBT	3	5100	750	.15*	790	.15*
SBR	f		850		810	
EBL	2	3400	660	.19*	800	.24
EBT	3	5100	480	.09	1120	.22*
EBR	1	1700	190	.11	460	.27
WBL	2	3400	560	.16	680	.20*
WBT	3	5100	990	.19*	500	.10
WBR	1	1700	260	.15	140	.08
Right Turn Adjustment					EBR	.05*
Clearance Interval				.05*		.05*

Note: Assumes Right-Turn Overlap for NBR

TOTAL CAPACITY UTILIZATION **.71** **.79**

12. Antonio Pkwy & Crown Valley

Existing (2014) Count

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	480	.14*	300	.09*
NBT	3	5100	910	.18	910	.18
NBR	1	1700	10	.01	10	.01
SBL	1	1700	40	.02	110	.06
SBT	3	5100	860	.17*	920	.18*
SBR	f		330		300	
EBL	2	3400	390	.11*	530	.16*
EBT	2	3400	60	.02	110	.03
EBR	1	1700	280	.16	360	.21
WBL	2	3400	20	.01	30	.01
WBT	3	5100	40	.01*	60	.01*
WBR	1	1700	30	.02	70	.04
Right Turn Adjustment			Multi	.06*	Multi	.08*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.54** **.57**

2035 with Existing Lanes

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	500	.15*	460	.14*
NBT	3	5100	1250	.25	1060	.21
NBR	1	1700	10	.01	10	.01
SBL	1	1700	40	.02	120	.07
SBT	3	5100	950	.19*	1110	.22*
SBR	f		430		270	
EBL	2	3400	250	.07*	480	.14*
EBT	2	3400	60	.02	110	.03
EBR	1	1700	510	.30	520	.31
WBL	2	3400	20	.01	30	.01
WBT	3	5100	60	.01*	70	.01*
WBR	1	1700	20	.01	50	.03
Right Turn Adjustment			EBR	.23*	Multi	.19*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.70** **.75**

Appendix D CAPACITY ANALYSIS FOR K STREET AND COWCAMP ROAD

This section addresses the 2035 capacity analysis of the K Street and Cow Camp Road (CCR) Segment 2, which are two internal roadways within the Ranch. Figure D-1 illustrates the planned roadways that serve the Ranch along with the MPAH classification and Figure D-2 illustrates the 2035 ADT volumes for A Street/K Street and the general vicinity.

The roadway capacity evaluation focuses on the intersections within the roadway sections being evaluated. While there are procedures for analyzing continuous stretches of uninterrupted roadway, intersection controls such as traffic signals or roundabouts result in the analysis focusing on those intersections. For example, County guidelines for Santiago Canyon Road in Orange County requires a link analysis for sections greater than one mile between signalized intersections. Less than one mile and the analysis defers to peak hour intersection performance. This is the case for the sections of roadway evaluated here, since all three have an intersection spacing of less than one mile.

Using trip generation from build-out of the Ranch Plan, “K Street and Cow Camp Road were analyzed for roadway width requirements. “K” Street, designated on the MPAH as a 4 lane Secondary Arterial Highway, is confirmed to be adequate as a 2 lane roadway since it will maintain a LOS of D or better. Also, Cow Camp Road from C Street to Ortega Highway, designated as a 4 lane Primary Arterial Highway on the MPAH, , is confirmed to be a 2 lane roadway in the segment that crosses San Juan Creek, just east of the intersection with Ortega Highway since it will maintain a LOS of D or better.

Table D-1 summarizes the ICU results along with the level of service (LOS). As shown, the intersections will operate at an acceptable LOS of D or better. The conclusion from this evaluation is that the roadway designs for K Street and CCR at the locations directly serving PA3-4 have adequate capacity, with MPAH width reductions as noted. It is recognized that an amendment to the MPAH would need to be processed for obtaining approval of width reductions recommended in this report. Table D-2 summarizes 2035 ADT and peak hour volume.

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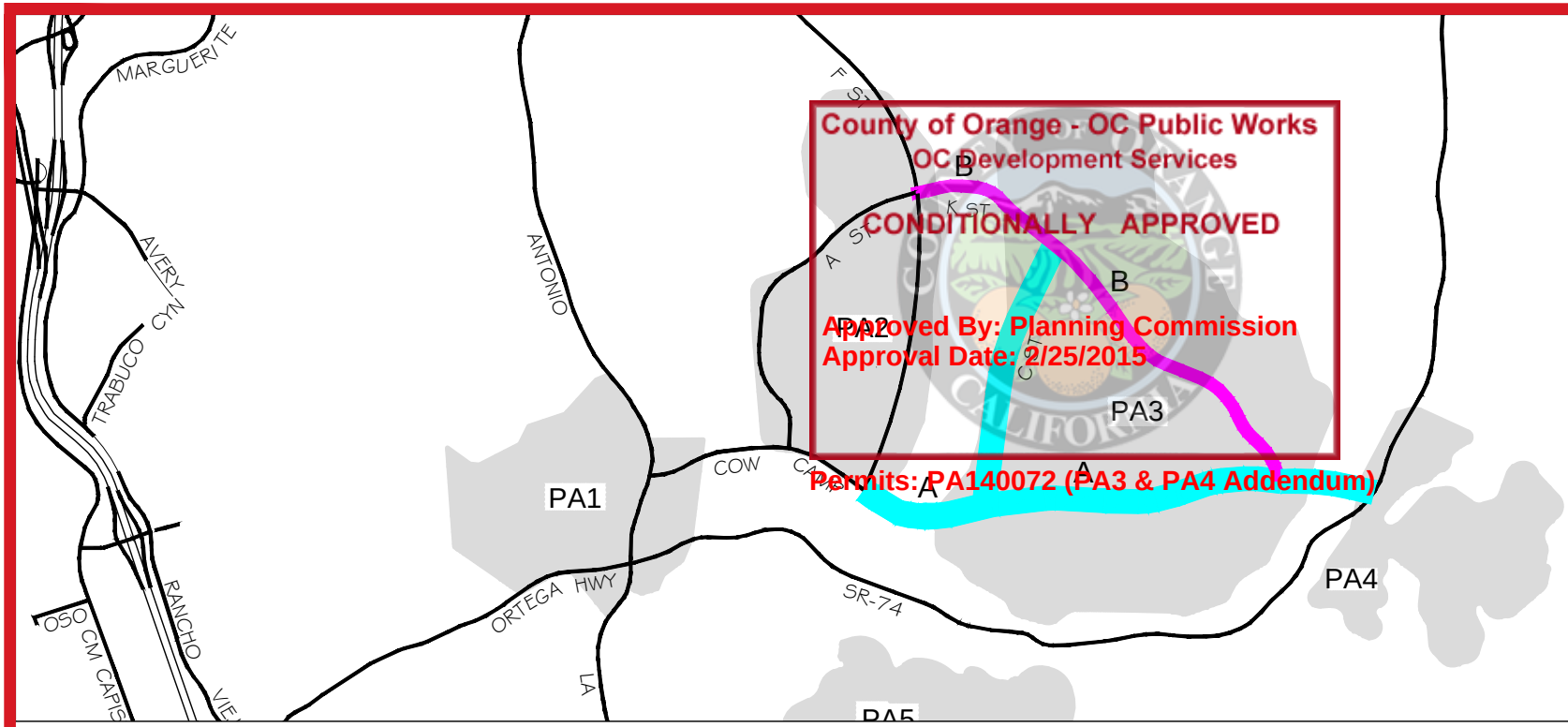

ID	Location	Legend	Description
A	CCR Segment 2		Primary (4-lanes divided)
B	K Street west of C St		Secondary (4-lanes undivided)

Stantec

MPAH Roadway Classifications for Ranch Plan Roadways

Figure D-1

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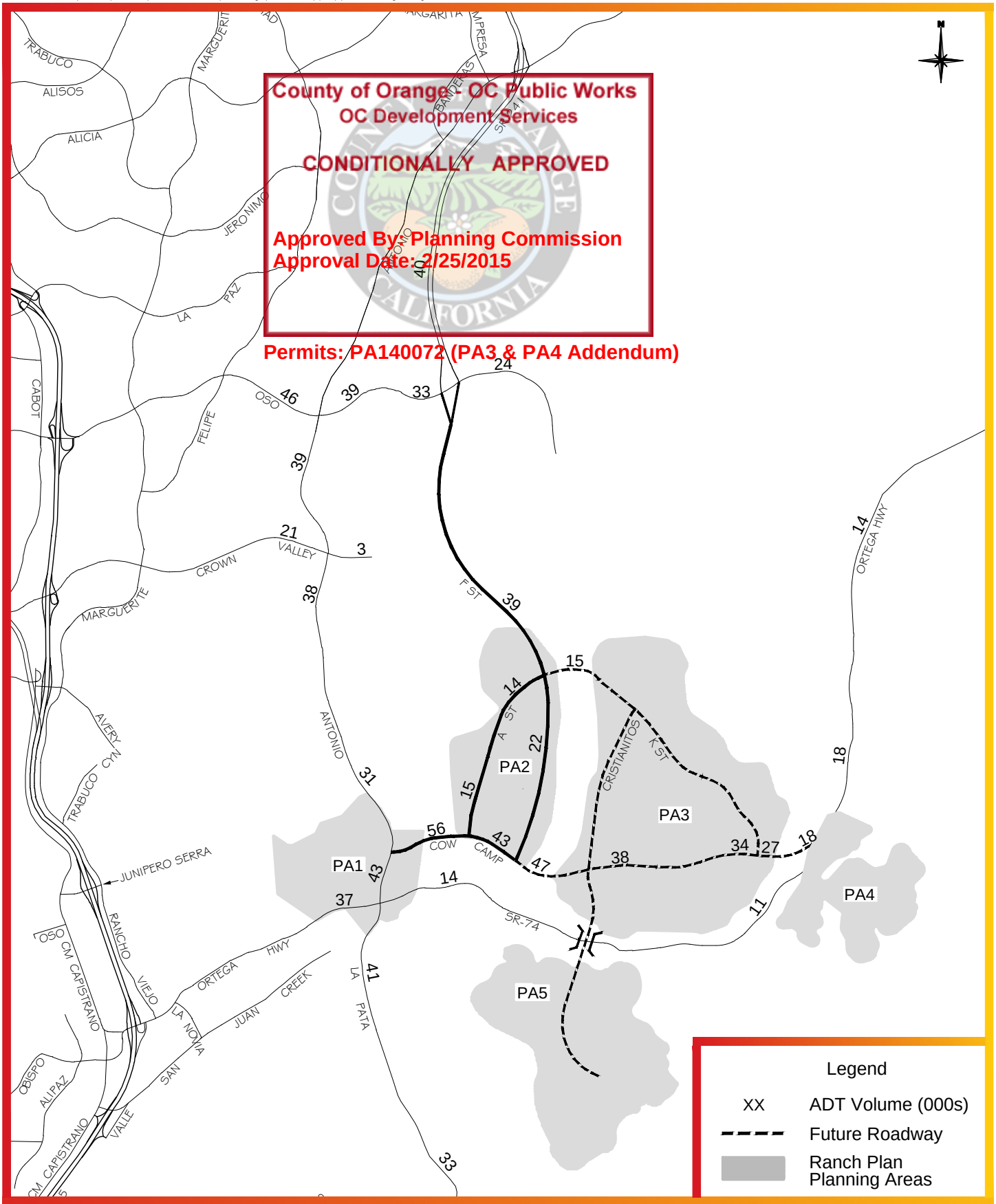

Stantec

2035 ADT Volumes (000's) - Full Buildout

Figure D-2

Table D-1 2035 ICU SUMMARY

	AM Peak Hour		PM Peak Hour	
Location	**ICU**	**LOS**	**ICU**	**LOS**
C Street & CCR	.74	C	.78	C
1st St & CCR	.73	C	.85	D
2nd St & CCR	.55	A	.60	A
K St & CCR	.67	B	.72	C
Ortega & CCR (2 lanes for CCR)	.52	A	.58	A
F St & K St (2 lanes for K St., east of F St.)	.50	A	.67	B
F St & K St (2 lanes for K St., east of F St.)	.48	A	.52	A

Table D-2 2035 ADT AND PEAK HOUR VOLUME SUMMARY

LOCATION	NORTH LEG						EAST LEG						SOUTH LEG						WEST LEG					
	SBL	SBT	SBR	SB	NB	TOTAL	WBL	WBT	WBR	WB	EB	TOTAL	NBL	NBT	NBR	NB	SB	TOTAL	EBL	EBT	EBR	EB	WB	TOTAL
C Street & CCR																								
Link ADT				24,000							38,000						10,000						47,000	
AM VOLUMES	100	20	470	590	460	1050	60	1350	170	1580	1290	2870	220	40	220	480	260	740	250	970	180	1400	2040	3440
Percent ADT				4.2%	3.3%	7.5%				4.2%	3.4%	7.6%				4.8%	2.6%	7.4%				3.0%	4.3%	7.3%
PM VOLUMES	130	110	380	620	720	1340	160	1340	170	1670	1970	3640	170	50	170	390	580	970	500	1670	310	2480	1890	4370
Percent ADT				4.4%	5.1%	9.4%				4.3%	5.2%	9.6%				3.9%	5.8%	9.7%				5.3%	4.0%	9.3%
1st Street & CCR																								
Link ADT				14,000						31,000						3,000						38,000		
AM VOLUMES	130	10	450	590	460	1050	30	1100	170	1300	1040	2340	40	20	20	80	130	210	270	890	90	1250	1590	2840
Percent ADT				4.2%	3.3%	7.5%				4.2%	3.4%	7.5%				2.7%	4.3%	7.0%				3.3%	4.2%	7.5%
PM VOLUMES	240	30	350	620	720	1340	20	1180	120	1320	1650	2970	70	30	70	170	120	290	570	1340	70	1980	1600	3580
Percent ADT				4.4%	5.1%	9.6%				4.3%	5.3%	9.6%				5.7%	4.0%	9.7%				5.2%	4.2%	9.4%
K Street & CCR																								
Link ADT				15,000						27,000						6,000						31,000		
AM VOLUMES	210	50	390	650	500	1150	170	830	160	1160	870	2030	90	20	40	150	310	460	320	620	90	1030	1310	2340
Percent ADT				4.3%	3.3%	7.7%				4.3%	3.2%	7.5%				2.5%	5.2%	7.7%				3.3%	4.2%	7.5%
PM VOLUMES	270	30	370	670	760	1430	60	800	270	1130	1430	2560	150	90	90	330	240	570	400	1070	150	1620	1320	2940
Percent ADT				4.5%	5.1%	9.5%				4.2%	5.3%	9.5%				5.5%	4.0%	9.5%				5.2%	4.3%	9.5%
2nd Street & CCR																								
Link ADT				7,000						18,000						6,000						27,000		
AM VOLUMES	20	10	300	330	210	540	30	730	50	810	580	1390	90	40	50	180	280	460	120	510	240	870	1120	1990
Percent ADT				4.7%	3.0%	7.7%				4.5%	3.2%	7.7%				3.0%	4.7%	7.7%				3.2%	4.1%	7.4%
PM VOLUMES	20	30	210	260	420	680	50	670	30	750	1000	1750	210	60	70	340	230	570	330	910	150	1390	1090	2480
Percent ADT				3.7%	6.0%	9.7%				4.2%	5.6%	9.7%				5.7%	3.8%	9.5%				5.1%	4.0%	9.2%
Ortega & CCR																								
Link ADT				19,000						7,000						10,000						18,000		
AM VOLUMES	30	340	480	850	590	1440	30	300	40	370	230	600	10	270	10	290	460	750	280	190	90	560	790	1350
Percent ADT				4.5%	3.1%	7.6%				5.3%	3.3%	8.6%				2.9%	4.6%	7.5%				3.1%	4.4%	7.5%
PM VOLUMES	30	230	490	750	1060	1810	20	230	30	280	390	670	10	510	20	540	360	900	520	340	110	970	730	1700
Percent ADT				3.9%	5.6%	9.5%				4.0%	5.6%	9.6%				5.4%	3.6%	9.0%				5.4%	4.1%	9.4%
K Street & F Street SB Ramps																								
Link ADT				10,000						15,000						0						14,000		
AM VOLUMES	170	0	140	310	0	310	0	280	0	280	770	1050	0	0	0	0	0	0	0	600	0	600	420	1020
Percent ADT				3.1%	0.0%	3.1%				1.9%	5.1%	7.0%										4.3%	3.0%	7.3%
PM VOLUMES	490	0	410	900	0	900	0	350	0	350	1050	1400	0	0	0	0	0	0	0	560	0	560	760	1320
Percent ADT				9.0%	0.0%	9.0%				2.3%	7.0%	9.3%										4.0%	5.4%	9.4%
K Street & F Street NB Ramps																								
Link ADT				10,000						15,000						0						15,000		
AM VOLUMES	0	0	0	0	730	730	0	280	380	660	420	1080	0	0	0	0	0	0	350	420	0	770	280	1050
Percent ADT				0.0%	7.3%	7.3%				4.4%	2.8%	7.2%										5.1%	1.9%	7.0%
PM VOLUMES	0	0	0	0	520	520	0	350	270	620	800	1420	0	0	0	0	0	0	250	800	0	1050	350	1400
Percent ADT				0.0%	5.2%	5.2%				4.1%	5.3%	9.5%										7.0%	2.3%	9.3%

1. C St & CCR

2035

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	2	3400	220	.06*	170	.05
NBT	2	3400	40	.01	50	.01*
NBR	1	1700	220	.13	170	.10
SBL	1	1700	100	.06	130	.08*
SBT	2	3400	70	.01*	110	.03
SBR	2	3400	470	.14	380	.11
EBL	2	3400	250	.07*	500	.15
EBT	3	5100	970	.23	1670	.39*
EBR	0	0	180		310	
WBL	1	1700	60	.04	160	.09*
WBT	3	5100	1350	.30*	1340	.30
WBR	0	0	170		170	
Right Turn Adjustment			Multi	.25*	Multi	.16*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.74**		**.78**

2. 1st St & CCR

2035

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	40	.02	70	.04
NBT	2	3400	20	.01*	30	.01*
NBR	1	1700	20	.01	70	.04
SBL	1	1700	130	.08*	240	.14*
SBT	2	3400	10	.00	30	.01
SBR	1	1700	450	.26	350	.21
EBL	2	3400	270	.08*	570	.17*
EBT	2	3400	890	.26	1340	.39
EBR	1	1700	90	.05	70	.04
WBL	1	1700	30	.02	20	.01
WBT	2	3400	1100	.32*	1180	.35*
WBR	1	1700	170	.10	120	.07
Right Turn Adjustment			SBR	.19*	Multi	.13*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.73**		**.85**

3. 2nd St & CCR

2035

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	90	.05*	210	.12*
NBT	1	1700	40	.02	60	.04
NBR	1	1700	50	.03	70	.04
SBL	1	1700	20	.01	20	.01
SBT	1	1700	10	.01*	30	.02*
SBR	1	1700	300	.18	210	.12
EBL	2	3400	120	.04*	330	.10*
EBT	2	3400	510	.15	910	.27
EBR	1	1700	240	.14	150	.09
WBL	1	1700	30	.02	50	.03
WBT	2	3400	730	.23*	670	.21*
WBR	0	0	50		30	
Right Turn Adjustment			SBR	.17*	SBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.55**		**.60**

4. K St & CCR

2035

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	90	.05	150	.09
NBT	1	1700	20	.01*	90	.05*
NBR	1	1700	40	.02	90	.05
SBL	1	1700	210	.12*	270	.16*
SBT	1	1700	50	.03	30	.02
SBR	1	1700	390	.23	370	.22
EBL	2	3400	320	.09*	400	.12*
EBT	2	3400	620	.18	1070	.31
EBR	1	1700	90	.05	150	.09
WBL	1	1700	170	.10	60	.04
WBT	2	3400	830	.24*	800	.24*
WBR	1	1700	160	.09	270	.16
Right Turn Adjustment			Multi	.16*	SBR	.10*
Clearance Interval				.05*		.05*
TOTAL CAPACITY UTILIZATION				**.67**		**.72**

5. Ortega & CCR

2035

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	1	1700	10	.01*	10	.01
NBT	2	3400	270	.08	510	.16*
NBR	0	0	10		20	
SBL	1	1700	30	.02	30	.02*
SBT	2	3400	340	.20*	230	.14
SBR	0	0	40	.08	40	.03
EBL	2	3400	280	.08*	520	.15*
EBT	2	3400	190	.08	340	.13
EBR	0	0	90		110	
WBL	1	1700	30	.02	20	.01
WBT	2	3400	300	.10*	230	.08*
WBR	0	0	40		30	
Right Turn Adjustment			SBR	.08*	SBR	.12*
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.52** **.58**

6. F St SB & K St

2035

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	1	1700	170	.10*	490	.29*
SBT	0	0	0		0	
SBR	1	1700	140	.08	410	.24
EBL	0	0	0		0	
EBT	1	1700	600	.35*	560	.33*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	280	.16	350	.21
WBR	0	0	0		0	
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.50** **.67**

7. F St NB & K St

2035

	LANES	CAPACITY	AM PK HOUR VOL	AM PK HOUR V/C	PM PK HOUR VOL	PM PK HOUR V/C
NBL	0	0	0		0	
NBT	0	0	0		0	
NBR	0	0	0		0	
SBL	0	0	0		0	
SBT	0	0	0		0	
SBR	0	0	0		0	
EBL	1	1700	350	.21*	250	.15
EBT	1	1700	420	.25	800	.47*
EBR	0	0	0		0	
WBL	0	0	0		0	
WBT	1	1700	280	.16*	350	.21
WBR	1	1700	380	.22	270	.16
Right Turn Adjustment			WBR	.06*		
Clearance Interval				.05*		.05*

TOTAL CAPACITY UTILIZATION **.48** **.52**