Draft
Revised Environmental Impact Report for the September Ranch Subdivision Project

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September Ranch Subdivision Project
Draft
Revised Environmental Impact Report

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SECTION 1
INTRODUCTION

1.1 Authority

This Draft Revised Environmental Impact Report (REIR) is prepared to evaluate potential environmental impacts associated with the implementation and development of the September Ranch Subdivision project. The County of Monterey is the lead agency for the preparation of this Draft REIR. This document is prepared in conformance with CEQA (California Public Resources Code Section 21000 et seq.), the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.) and the rules, regulations, and procedures for implementing CEQA contained in the County of Monterey Municipal Code.

This Draft REIR is intended to serve as an informational document for the public agency decision-makers and the general public regarding the project objectives and components of the proposed project. The environmental impacts of the proposed project are analyzed in the REIR to the degree of specificity appropriate to the current proposed project, in accordance with Sections 15146 and 15180 of the State CEQA Guidelines. This document will address potentially significant adverse environmental impacts that may be associated with planning, construction, or operation of the project, as well as identify appropriate and feasible mitigation measures and alternatives that may be adopted to significantly reduce or avoid these impacts. CEQA requires that an EIR contain, at a minimum, certain specific elements. These elements include:

- Table of Contents
- Executive Summary
- Project Description
- Environmental Setting
- Significant Environmental Impacts (Direct, Indirect, Short-Term, Long-term, Cumulative, and Unavoidable Impacts)
- Areas of Known Controversy
- Alternatives to the Proposed Project
- Mitigation Measures
- Growth Inducing Impacts
- Significant Irreversible Changes

1.2 History of Environmental Review

In 1995, the project applicant applied to the Monterey County Planning and Building Inspection Department (MCPBID) for a preliminary Project Review Map and Vesting Tentative Map to allow for the division of an 891-acre parcel. An EIR was prepared, certified, and approved by the Board of Supervisors in December 1998. The approval was challenged by Save Our Peninsula Committee et al, and the Sierra Club et al. The Superior Court of Monterey County (Nos. M42412 and M42485)

found that the EIR was legally inadequate under California Environmental Quality Act (CEQA) with respect to water and traffic impact issues and mitigation and the Superior Court subsequently vacated the Monterey County Board of Supervisors 1998 approval of the project.

The project applicants, real parties in interest, appealed the judgment. In 2001, the 6th District Court of Appeal upheld the ruling of the lower court with respect to the inadequacies of the treatment of water issues, but reversed that portion of the decision pertaining to traffic impacts. Thus and REIR must be prepared. The Court of Appeal decision contained explicit direction regarding the discussion and analysis required for a legally adequate Revised Environmental Impact Report (REIR). This direction formed the basis of a new judgment and writ of mandate issued in the case (Save Our Peninsula v. Monterey County Board. of Supervisors (2001) 87 Cal. App.4th 99, 104 Cal. Rptr.2d 326).

In 2002, the MCPBID retained a consultant to prepare a REIR for the September Ranch Subdivision project, submitted by the project applicant James H. Morgens, and the September Ranch Partners. The REIR shall comply with the decision of the California Court of Appeal in Save Our Peninsula v. Monterey County Bd. of Supervisors (2001) 87 Cal. App.4th 99, 104 Cal. Rptr.2d 326, as to the preparation of a legally adequate REIR, and to provide an independent, updated analysis and review of the various CEQA issues raised by the proposed project under the CEQA.

1.3 Determination of the Lead Agency and Responsible Agency

State CEQA Guidelines Section 15367 defines the lead agency as "… the public agency, which has the principal responsibility for carrying out or approving a project." Criteria considered in identifying the lead agency include whether the agency 1) has the greatest responsibility for supervising or approving the project as a whole; 2) is an agency with the general governmental powers, and 3) will act first on the project in question (refer to State CEQA Guidelines Section 15051). The lead agency for this REIR is the County of Monterey. As the lead agency, the County of Monterey has responsibility for review, adoption, and oversight of implementation of the project.

Other public agencies may use this REIR in the decision-making or permit process and consider the information in this REIR along with other information that may be presented during the CEQA process. Environmental impacts may not always be mitigated to a level considered less than significant; in those cases, impacts are considered significant unavoidable impacts. In accordance with Section 15093(b) of the State CEQA Guidelines, if a public agency approves a project that has significant impacts that are not substantially avoided or lessened (e.g., significant unavoidable impacts), the agency shall state in writing (Statement of Overriding Considerations) the specific reasons to support its actions based on the Final REIR or other information in the record. The Statement of Overriding Considerations must be supported by substantial evidence in the record and should be included in the record of project approval. Additionally, the Statement of Overriding Considerations does not substitute for the Findings as required by Section 15091 of the CEQA Guidelines.

This Draft REIR was prepared by a consultant under contract to the County of Monterey. Prior to public review, it was extensively reviewed and evaluated by the County of Monterey. This Draft REIR reflects the independent judgment and analysis of the County of Monterey as required by

CEQA. Lists of organizations and persons consulted and the report preparation personnel are provided in Sections 8 and 9 of this Draft REIR, respectively.

1.4 Purpose of the REIR

The September Ranch Subdivision project Draft REIR is considered a project level REIR. The intent of this document is to be responsive to the court decision of the California Court of Appeal in Save Our Peninsula v. Monterey County Bd. of Supervisors (2001) 87 Cal. App.4th 99, 104 Cal. Rptr.2d 326, as to the preparation of a legally adequate REIR and analyze the environmental effects of the proposed project to the degree of specificity required by Section 15161 of the State CEQA Guidelines. Hence, it is anticipated that upon certification of this REIR, no additional environmental review will be required for the implementation of the proposed project. This REIR also considers a series of actions that are needed to achieve the development of the proposed project. Among the actions being requested are the approval of project components and a development agreement to vest development rights. Additional County approvals (e.g., Preliminary Project Review Map, Vesting Tentative Map, development permits, grading permits, building permits, tree removal permits, etc.) may also be needed. The lead agency, as well as other responsible agencies, can approve subsequent actions without additional environmental documentation unless otherwise required by Public Resources Code Section 21166 and State CEQA Guidelines Sections 15162, 15163 and 15164.

The actions involved in the implementation of the proposed project are described in Section 3, Project Description, of this REIR. Other agencies that may have discretionary approval over the project, or components thereof, are also described in Section 3.

1.5 Scope of the REIR

This REIR addresses the potential environmental effects of the proposed project. The scope of the REIR includes the areas of controversy identified by the Notice of Preparation (NOP) issued by the County as well as issues raised by agencies and the general public in response to the NOP, as described below.

1.5.1 Scoping Process

In compliance with State CEQA Guidelines, the County of Monterey has taken steps to maximize the public's opportunity to participate in the environmental process. An Initial Study (IS) and Notice of Preparation (NOP) were distributed on January 31, 2003, via certified mail to agencies and other interested parties to solicit comments and inform the public of the proposed project. The IS/NOP, the distribution list for the IS/NOP, and comment letters received during and after the NOP period are attached to this Draft REIR as Appendix A. Agencies, organizations, and interested parties not previously contacted or who did not respond to the NOP, currently have the opportunity to comment during the 45-day public review period on the Draft REIR and subsequent pubic hearings on the project and REIR.

1.6 EIR Focus and Effects Found Not To Be Significant

The scope of the REIR includes issues identified by the decision in the California Court of Appeal in Save Our Peninsula v. Monterey County Board of Supervisors (2001) 87 Cal. App. 4th 99, 104 Cal. Rptr. 2d 326 and issues identified by the County of Monterey during the preparation of the IS/NOP

for the proposed project, as well as environmental issues raised by agencies and the general public in response to the IS/NOP.

Based on the comments received in the public review period of the IS/NOP, the environmental issues, which could result in potentially significant impacts that are addressed in this Draft REIR, consist of the following:

- Land Use and Planning
- Geology and Soils
- Water Supply and Availability
- Hydrology and Water Quality
- Wastewater Treatment and Disposal
- Transportation and Circulation
- Air Quality
- Noise
- Biological Resources
- Cultural Resources
- Aesthetics
- Population, Housing, and Employment
- Public Services and Utilities

The environmental issues that are determined not to be significantly affected by the proposed project and therefore, do not require further analysis in this Draft REIR pursuant to Section 15063(c) of the State CEQA Guidelines (as amended) are as follows:

- Agricultural Resources
- Mineral Resources
- Hazardous Materials

1.7 Incorporation by References

As permitted by Section 15150 of the State CEQA Guidelines, this Draft REIR has referenced several technical studies, analyses and reports. Information from the documents, which are incorporated by reference, is briefly summarized in the appropriate sections that follow. The relationship between the incorporated part of the referenced documents and the Draft REIR has also been described. The documents and other sources that have been used in the preparation of this Draft REIR include a number of environmental planning documents that were prepared for development projects. These documents include the County of Monterey General Plan and EIR (September 1982), Carmel Valley Master Plan (November 1996), and the Final EIR for the September Ranch Subdivision project (March 6, 1998). These documents are specifically identified in Section 11, References, of this Draft REIR. In accordance with Section 15150(b) of the State CEQA Guidelines, the public may obtain

and review these referenced documents and other sources used in the preparation of the Draft REIR at the MCPBID.

1.8 Project Sponsors and Contact Persons

The County of Monterey is the lead agency in the preparation of the Draft REIR. Michael Brandman Associates is the environmental consultant to the County for the project. The applicant for the proposed project is James Morgan, September Ranch Partners.

Preparers of this Draft REIR are identified in Section 9, Report Preparation Personnel, of this document. Key contact persons are as follows:

Lead Agency:	Monterey County Planning and Building Inspection Department Alana Knaster, Chief Assistant Director 2620 1st Avenue, Marina, CA 93933 831.883.7526 (voice) 831.384.3261 (fax) e-mail: knastera@co.monterey.ca.us
Environmental Consultant:	Michael Brandman Associates Jason Brandman, Regional Manager 2000 Crow Canyon Place, Suite 415 San Ramon, CA 94583-1300 925.830.2733 (voice) 925.830.2715 (fax) e-mail: jbrandman@brandman.com
Applicant:	September Ranch Partners, James Morgen Morgens Property & Investments Company 3562 Knollwood Drive Atlanta, GA 30305

1.9 Review of the Draft REIR

This Draft REIR has been distributed to responsible and trustee agencies, other affected agencies, surrounding cities, and interested parties, as well as all parties requesting a copy of the Draft REIR in accordance with Public Resources Code 21092(b)(3). The Notice of Completion of the Draft REIR has also been distributed as required by CEQA. During the 45-day public review period, the Draft REIR, including the technical appendices, is available for review at the County of Monterey.

Written comments on the Draft REIR should be addressed to:

County of Monterey
Planning and Building Inspection Department
Alana S. Knaster, Chief Assistant Director
2620 1st Avenue
Marina, CA 93933

Upon completion of the 45-day public review period, written responses to all significant environmental issues raised will be made available for review at least 10 days prior to the public

hearing before the County of Monterey Board of Supervisors, at which time the certification of the Final REIR will be considered. These environmental comments and their responses will be included as part of the environmental record for consideration by decision-makers for the project.

SECTION 2
EXECUTIVE SUMMARY

2.1 Proposed Project

The proposed project involves the subdivision of 891 acres into 94 market rate residential lots, 15 units of inclusionary housing, and a 20.2-acre lot for the existing equestrian facility; 782.8 acres are proposed as open space. Other appurtenant facilities and uses would include separate systems for the distribution of potable water, water tanks for fire suppression, a sewage collection and treatment system, wastewater treatment system, drainage system, internal road system, common open space, tract sales office, and security gate.

The Carmel Valley Master Plan (CVMP) guides land use on the project site. The northerly portion of the property, which contains 494 acres, is designated by the CVMP as Rural Density Residential 5+ acres/unit and is zoned RDR/10-D-S (Rural Density Residential, 10 acres/Unit-Design Control-Site Control); the southern portion is designated Low Density Residential 5-1 acres/unit and is zoned LDR/2.5-D-S (Low Density Residential/2.5 Design Control-Site Control). The Project would require a General Plan amendment to change the land use designation from Low Density Residential 5-1 acres/unit to Medium Density Residential 1-5 units/acre and a zoning Reclassification from LDR 2.5-D-S to MDR-5-D-S to allow clustering of the inclusionary housing units.

Site improvements would require approximately 100,000 cubic yards of grading, and a tree removal permit. The Project would also require a waiver of County regulations prohibiting development on slopes in excess of 30 percent to allow for construction of internal access roads.

2.2 Areas of Controversy/Issues to be Resolved

The potential areas of controversy and issues to be resolved through the REIR process are derived from the Initial Study/Notice of Preparation (Appendix A) and responses thereto. These areas are summarized as follows:

- The proposed project will result in approximately 108 acres of the project site being transitioned from essentially undeveloped land to residential uses. This will alter the existing landscape and views from surrounding areas, potentially resulting in incompatibilities with existing and proposed land uses in the project area or result in conflict with the plans and policies of the General Plan or other documents that guide land use in the project area (see Section 4.1, Land Use and Planning).
- Project implementation will require approximately 100,000 cubic yards of grading and will involve development on slopes in excess of 30 percent. The project site is subject to geologic constraints including, but not limited to, landslides (see Section 4.2, Geology and Soils).
- Approximately 57.21 acre-feet per year of water will be required to serve the September Ranch Subdivision site. Potable water supplies will be via onsite wells (see Section 4.3, Water Supply and Availability).

- The proposed project will result in erosion and sedimentation during earth moving activities and will result in an increase in impervious surfaces (see Section 4.4, Hydrology and Water Quality).
- The proposed project will result in an increased generation of wastewater at the project site. Project implementation will result in construction and operation of an onsite wastewater treatment plant (WTP) or, alternatively, in the event that the project does not include the construction and operation of an onsite WTP, wastewater flows generated by the project will be handled by the Carmel Area Wastewater District (see Section 4.5, Wastewater Treatment and Disposal).
- The proposed project will result in the addition of 1,053 daily vehicle trips to the project area circulation system and the addition and/or reconfiguration of roadways (see Section 4.6, Transportation and Circulation).
- The proposed project will have air quality impacts in the short-term during construction of the residential units and associated infrastructure and in the long-term through introduction of new sources of vehicle emissions (see Section 4.7, Air Quality).
- The proposed project will result in the generation of noise in the short-term during construction and in the long-term as vehicular traffic increases within the project area (see Section 4.8, Noise).
- The project's development on the 891-acre project site is situated in the southern portion of the property. The northern portion of the property is contiguous with Jacks Peak Regional Park. Approximately fifty percent of the project site is covered with Monterey pine/coast live oak forest. Monterey pines have been designated as a sensitive plant. Other vegetation includes coastal sage scrub, grasslands, and willow riparian habitat. Sensitive wildlife species also occur onsite (see Section 4.9, Biological Resources).
- Project Implementation will result in earth moving activities, thus there is the potential that unknown cultural resources could be unearthed or disturbed (see Section 4.10, Cultural Resources).
- The proposed project will result in construction of 109 residential units and the overall intensification of the project site, which will alter existing views in the project area (see Section 4.11, Aesthetics).
- The proposed project will result in the construction of 109 residential units and relocation of approximately 350 people into the project area (see Section 4.12, Population, Housing, and Employment).
- Project implementation will require the extension of public services and utilities to the project site (see Section 4.13, Public Services and Utilities).

2.3 Significant Unavoidable Adverse Environmental Effects

State CEQA Guidelines Requirements

Section 15126.2(b) of the State CEQA Guidelines requires an EIR to "describe any significant impacts, including those which can be reduced, mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described."

Significant Unavoidable Impacts of the Proposed Project

Section 4, Environmental Impact Analysis, of this Draft REIR provides an evaluation of the potential environmental impacts of the proposed project and recommends mitigation measures to reduce impacts to a less-than-significant level where feasible. With implementation of the proposed mitigation measures, no significant unavoidable impacts would result through implementation of the proposed project.

2.4 Cumulative Impacts

Cumulative impacts of the proposed project combined with past, present, and reasonably foreseeable future projects were evaluated in Section 5 of this Draft REIR. No significant cumulative impacts were identified.

2.5 Summary of Alternatives

In accordance with Section 15126(d) of the CEQA Guidelines, Section 6, Alternatives to the Proposed Project, include a comparative evaluation of the proposed project with alternatives to the project. Additionally, the alternatives are discussed in terms of achieving the project objective, which is to provide market rate and low- to moderate-income housing, in accordance with existing County ordinances and the CVMP. This Draft REIR includes an evaluation of the following alternatives to the proposed September Ranch project:

- No Project/No Development Alternative
- Reduced Density - Planning Commission Recommendation Alternative
- Reduced Forest Impact with High Inclusionary Housing Alternative
- Reduced Forest Impact with Twenty Percent Inclusionary Housing Alternative
- Environmentally Superior Alternative

Section 6 of this Draft REIR provides descriptions and analysis of each alternative. The Environmentally Superior Alternative is determined to be the No Project/No Development Alternative. However, the No Project/No Development Alternative fails to meet any of the project objectives, or objectives of the September Ranch Subdivision project. CEQA states that if the environmentally superior alternative is the No Project alternative, the EIR shall also identify an environmentally superior alternative from other alternatives. Thus, the Planning Commission Recommendation Alternative is considered the environmentally superior alternative. Although this alternative was determined to be environmentally superior to the proposed project, in relation to geology and soils, water supply and availability, hydrology and water quality, wastewater treatment and disposal, traffic and circulation, air quality, noise, biological resources, cultural resources, aesthetics, and public services and utilities, it would not "fully" obtain the objectives of the September Ranch Subdivision project. More specifically, by reducing the scale of the project, the Planning Commission Recommendation Alternative significantly reduces the amount of inclusionary housing onsite by almost fifty percent, in comparison to the proposed project.

2.6 Mitigation Monitoring Program

CEQA requires agencies to set up monitoring report programs for ensuring compliance with the mitigation measures adopted as conditions of approval in order to mitigate or avoid significant environmental effects as identified in the REIR. A mitigation monitoring program, incorporating the mitigation measures set forth in this document, will be adopted at the time of certification of the EIR.

2.7 Summary of Environmental Effects and Mitigation Measures

Section 4, Environmental Impact Analysis and Section 5, Cumulative Impacts, of this Draft REIR describe in detail the environmental impacts that would result from the implementation of the proposed project. Table 2-1, Executive Summary, summarizes the impacts of the proposed project and mitigation measures for those impacts. Impacts that are noted in the summary as "significant" after mitigation will require the adoption of a statement of overriding considerations, if the project is approved as proposed (CEQA Section 15093).

In this table, impacts of the project are classified as: 1) Less than Significant (adverse effects that are not substantial, according to CEQA, but may include recommended mitigation) or 2) Significant and Unavoidable (substantial adverse changes in the environment that cannot be avoided even with feasible mitigation). Mitigation measures are listed, as applicable, for each impact.

Table 2-1: Executive Summary Matrix Table

Impacts	Mitigation Measures	Level of Significance After Mitigation
4.1 LAND USE AND PLANNING		
Less than Significant Impact - Land Use Compatibility.	No mitigation measures are required.	Less than significant.
4.2 GEOLOGY AND SOILS		
Potentially Significant (Geological Impact 1) - Surface Rupture and Seismic Shaking.	**4.2-1:** The proposed project shall have a 50-foot setback for residential dwellings on either side of the southern mapped trace of the Hatton Canyon fault. **4.2-2:** Underground utilities, which cross the fault trace shall be fitted with flexible couplings and shut off valves. **4.2-3:** Prior to the construction of lots 65, 66, and 68, and any additional construction on the equestrian center, the project engineering geologist shall confirm that no fault traces cross the proposed building sites. **4.2-4:** Proposed structures shall incorporate design in accordance with the latest Uniform Building Code and the appropriate seismic design criteria. A geotechnical investigation shall be prepared for each proposed building site to characterize soil and bedrock conditions so that suitable seismic foundation designs can be provided. The geologic investigation shall employ standard engineering practices to ensure adequate foundations and design standards for the building sites.	Less than significant.
Potentially Significant (Geological Impact 2) - Slope Stability, Debris Flow, and Soil Creep.	**4.2-5:** Earthwork and grading shall be kept to a minimum within the landslide deposits; any work performed within these areas shall be performed under the supervision of a qualified engineering geologist. **4.2-6:** Cut slopes in competent bedrock shall be constructed at slope inclinations no steeper than 0.5:1 to heights up to 15 feet, and should be approved by the project engineering geologist before grading.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	4.2-7: Proposed cut slopes steeper than 0.5:1 or exceeding a height of about 15 feet may be allowed upon the approval by the project engineering geologist or geotechnical engineer. **4.2-8:** Cut slopes within severely weathered rock that is susceptible to bedrock creep, or in areas of adverse bedding dip shall employ flatter slopes, typically 2:1 or less. **4.2-9:** Structures located within old landslide deposits shall be constructed at or very near the natural grade to reduce cut slopes. Limited cut slopes can be created for access roadways and shall be constructed on slopes no greater than 2:1 and shall not exceed heights of 15 feet. Cut slopes shall be approved by the project engineering geologist or a geotechnical engineer before grading. **4.2-10:** Cut slopes in colluvium, alluvium, or topsoil shall be constructed at a slope inclination not steeper than 2:1. All cut slopes shall be provided with permanent protection against erosion. **4.2-11:** Compacted fill slopes shall be constructed at a slope inclination not steeper than 2:1. All fill slopes shall be provided with permanent protection again erosion. **4.2-12:** Control cut and fill earthwork that may destabilize the land surface; vegetation removal; and control surface water infiltration. **4.2-13:** Residential lots located upslope of or adjacent to old landslide deposits shall have drainage systems that divert concentrated surface waters from the slide masses. **4.2-14:** Landscape irrigation systems shall be kept to a minimum (Monterey County standards) on lots shown in landslide deposits. Construction on ancient landslide deposits shall be appropriately designed to result in overall improvement to the existing drainage conditions within the landslide areas. Unlined ponds on or adjacent to the slide mass shall be avoided.	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	4.2-15: Subsequent design-level geotechnical investigations shall be preformed at the appropriate time following preparation of definitive grading plans and during design of specific structures. In addition, subsequent geologic investigations shall be performed before construction on Lots 65, 66, and 68. Subsequent subsurface exploration shall be conducted before the final map approval to further characterize the possible mapped landslide in the vicinity of Lots 85 and 86.	
Potentially Significant (Geological Impact 3) - Erosion, Sedimentation, and Groundwater.	**4.2-16:** The effects of erosion and sedimentation may be mitigated by vegetative cover and properly designed surface drainage features. Competent bedrock exposed in both natural slopes and cut slopes will be less susceptible to erosion and, therefore, may not need a protective slope cover. Many of these slopes tend to be covered by rocky rubble, which works its way down slope over many years. Proper surface drainage systems shall be designed to direct concentrated water runoff away from the tops of these slopes. **4.2-17:** Shallow ground water conditions shall be considered in the design of roadways, utilities, and structures in these areas. **4.2-18:** Drainage control shall include provisions for positive gradients so that surface runoff is not permitted to pond, either above slopes or adjacent to building foundations. Surface runoff and runoff from roof gutters shall be collected in lined ditches, closed pipes, or drainage swales and shall be conducted adequately to a storm drain, paved roadway, or water course.	Less than significant.
4.3 WATER SUPPLY AND AVAILABILITY		
Less than Significant Impact - Substantially Degrade and Deplete Groundwater or Interfere with Groundwater Recharge.	No mitigation measures are required.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
Less than Significant Impact – Use of Water in a Wasteful Manner.	No mitigation measures are required.	Less than significant.
Less Than Significant Impact - Result in a Yield in the Groundwater System that is not Sufficient to Provide the Project Water Demand on a Long-Term Basis or During Droughts or Decreases the Availability of Groundwater to Existing Users of the Same Groundwater Basin.	No mitigation measures are required.	Less than significant.
Less than Significant Impact - Increase in Pumping Demand on the Carmel Valley Aquifer.	No mitigation measures are required.	Less than significant.
4.4 HYDROLOGY AND WATER QUALITY		
Potentially Significant (Hydrology and Water Quality Impact 1) - Storm Water Runoff and Drainage.	**4.4-1:** The proposed project shall include the construction, operation, and maintenance of detention basins to accommodate the 100-year storm event, with engineered design features to control release of detained flows to pre-development 10-year storm levels, as planned.	Less than significant.
Potentially Significant (Hydrology and Water Quality Impact 2) - Short-Term Water Quality Construction Impacts.	**4.4-2:** The project applicant shall prepare a drainage plan, which includes the proper design and placement of sediment traps to preen the discharge of sediments and pollutants into offsite drainage channels. In order to mitigate adverse water quality impacts that could be generated by the proposed project after construction, potential BMPs for storm water runoff quality control should be incorporated into project design. These could include such measures as vegetated buffer strips, use of porous pavement, "grass-phalt," cisterns of storm water storage, street sweeping, percolation basins and grease/oil traps (with regular maintenance programs. Good housekeeping, waste containment, minimization of disturbed areas, stabilization of disturbed areas, the protection	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	of slopes and channels, the control of the site perimeter, and the control of internal erosion are the objectives of the BMPs. The BMPs include limiting soil exposure through scheduling and preserving existing vegetation; stabilizing soils through seeding, planting, and mulching; diverting runoff through earth diking, temporary drains, swales, and slope drainage; reducing velocity through outlet protection, checking dams, slope roughening/terracing; trapping and filtering sediment through silt fencing, straw bale barriers, sand bag barriers, brush and rock filters, storm drain inlet protection, and sediment basins. Specific and extensive BMP measures, such as those identified below, should be contained in the Final Erosion Control Report, which shall be submitted as a condition of the Final Map. • Temporary erosion and sedimentation control features shall be maintained until revegetation is sufficient to prevent erosion of disturbed construction and restoration sites. Sufficiency of revegetation shall be determined by the project's conservation manager and certified erosion and sedimentation control specialists. • Periodic pre-storm, storm, and post-storm monitoring inspections of BMP measures shall be conducted from the duration of construction phases and until temporary protection features have been removed. • Daily inspections shall be conducted during grading construction to assure condition and adequacy of erosion and sedimentation control features. • Daily repairs of damaged erosion- and sedimentation-control features (e.g., downed silt fencing, broken straw bales, damaged sandbags) shall be completed.	

Impacts	Mitigation Measures		Level of Significance After Mitigation
Potentially Significant (Hydrology and Water Quality Impact 3) - Long-Term Water Quality Operational Impacts.	**4.4-3:**	The applicant shall prepare CC&Rs, which include requirements for the type and frequency of catch basin, sediment trap, and storm water inlet cleaning and maintenance. The storm drainage system shall be maintained on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the down stream conveyance system, and maintain the catch basins sediment trapping capacity. The homeowner's association, or some other similar responsible entity, shall provide for at least an annual inspection regimen and immediately repair or clean the system, as needed.	Less than significant.
4.5 WASTEWATER TREATMENT AND DISPOSAL			
Potentially Significant (Wastewater Treatment and Disposal Impact 1) – Construction and Operation of Onsite Treatment Plant and Onsite Disposal of Treated Water.	**4.5-1:**	The applicant shall form a PUC regulated company or request that the package plant be operated by a regional agency.	Less than significant.
	4.5-2:	Prohibit the discharge of toxic substances or substances that will adversely affect the collection, treatment, or disposal of wastewater.	
	4.5-3:	Submit a final operations plan subject to the review and approval of the Director of Environmental Health for the operation of the reclaimed water storage reservoir to ensure the protection of public health and the environment. At a minimum, the final plan shall include provisions for disclosing the proper operations and maintenance of the STEP systems to homeowners, proper maintenance and operations of the reclaimed water system subject to common ownership and the parties responsible for such maintenance.	
	4.5-4:	The wastewater storage pond shall be fenced and secured against entry by anyone other than the operators of the system. The fencing shall be designed and installed so that it is not visible from Carmel Valley Road or project residences.	

Impacts	Mitigation Measures	Level of Significance After Mitigation
Less than Significant Impact – Collection and Transmission of Project-Generated Wastewater to Offsite Treatment Plant.	No mitigation measures are required.	Less than significant.
Less than Significant Impact - Nitrate Loading.	No mitigation measures are required.	Less than significant.
4.6 TRANSPORTATION AND CIRCULATION		
Potentially Significant (Traffic and Circulation Impact 1) - Increase in Vehicle Trip Generation and Level of Service Deficiencies.	**4.6-1:** At the intersection of SR 1/Carpenter Street, use overlap phasing to have the westbound right-turns synchronized with the southbound SR 1 left-turn movement. **4.6-2:** At the intersection of Carmel Valley Road/Brookdale Drive/September Ranch Road, install a right-turn taper on westbound Carmel Valley Road and install a left-turn lane for both the eastbound and westbound Carmel Valley Road approaches. **4.6-3:** Contribute fair share fees, as determined by the County for CVMP Traffic Impact Fees. Fees would be required for the following improvements: • Signalizing the Carmel Valley Road/Dorris Drive intersection; • Signalizing the Carmel Valley Road/Laureles Grade intersection; and • Signalizing the Rio Road/Carmel Ranch Boulevard intersection. **4.6-4:** Contribute fair share fees for SR 1 improvements for all project-generated trips expected to use SR 1 north of Carmel Valley Road. The following improvements include: • At the intersection of SR 1/Ocean Avenue/Carmel Hills Drive, widening should occur to the eastbound and westbound approaches to have one exclusive left-turn	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	lane, one shared left-turn/through lane, and one exclusive right-turn lane. **4.6-5:** The project proponent shall contribute fair share fees for the left-turn channelization for both the eastbound and westbound approaches of the intersection of Carmel Valley Road/Brookdale Drive. **4.6-6:** The project proponent shall contribute fair share fees for the overlap phasing improvements along Carmel Valley Road (as identified in the CVMP, 1995) at the following locations: • In front of September Ranch; • Opposite of Garland Ranch Regional Park, which is east of Robinson Canyon Road; and • Near Laureles Grade Road, which is east of Garland Ranch Regional Park. **4.6-7:** The project applicant shall install a safe transit stop(s) convenient to both the entrance to the planned unit development and to the existing equestrian center. The applicant shall provide a passenger shelter in each direction, an improved pullout in each direction, and onsite signage at the project site showing the transit schedule and map.	
Potentially Significant (Traffic and Circulation Impact 2) - Site Distance.	**4.6-8:** The project applicant shall install the fourth (north) leg of September Ranch Road (the project access road) at the existing stop controlled T-intersection of Carmel Valley Road/Brookdale Drive. The project applicant shall be responsible for signalizing this intersection and any signal coordination costs associated with this signalization. **4.6-9:** Prior to the issuance of building permits, install an intersection ahead warning sign on eastbound Carmel Valley Road in advance of September Ranch Road to alert drivers on Carmel Valley Road.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
4.7 AIR QUALITY		
Potentially Significant Impact (Air Quality Impact 1) - Short-Term Construction Emissions.	**4.7-1:** The use of BACMs shall be required during grading operations. BACMs that shall be incorporated into the project include: • Water all active construction areas at least twice daily. • Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard. • Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites. • Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites. • Sweep streets daily (with water sweepers), if visible soil materials are carried onto adjacent public streets. • Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more). • Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (e.g., dirt, sand, etc.). • Limit traffic speeds on unpaved roads to 15 mph. • Install sandbags or other erosion control measures to prevent silt runoff to public roadways. • Replant vegetation in disturbed areas as quickly as possible. • Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph. • Limit the area subject to excavation, grading and other construction activity at any one time to no more than eight (8) acres on any given day.	

Impacts	Mitigation Measures	Level of Significance After Mitigation
Less than Significant Impact - Vehicle and Other Operational Emissions.	No mitigation measures are required.	Less than significant.
Less than Significant Impact - Emission of Other Criteria Pollutants and/or Odor Generation.	No mitigation measures are required.	Less than significant.
4.8 NOISE		
Less than Significant Impact - Short-Term Construction-Related Noise.	No mitigation measures are required.	Less than significant.
Potentially Significant (Noise Impact 1) - Long-Term Vehicular Generated Noise.	**4.8-1:** The southern facade of the inclusionary housing units shall have no balconies or decks facing Carmel Valley Road unless the perimeter of such balconies or decks are shielded by a five-foot high glass or transparent plastic barrier. **4.8-2:** Habitable rooms of the inclusionary housing units that face south shall have a source of supplemental ventilation to allow for window closure in such rooms.	Less than significant.
4.9 BIOLOGICAL RESOURCES		
Potentially Significant (Biological Resources Impact 1) – Habitat Disturbance during Site Improvements, Clearing, and Grading.	**4.9-1:** The project applicant shall submit a Tentative Map that is consistent with the recommendations outlined in the Forest Management Plan, the Open Space Management Plan, and the Grassland Habitat Management Plan and will include the following: • Defines development envelopes for each residential lot to minimize vegetation removal; • The identification of potential areas for building envelopes prior to the tentative map. The tentative map shall show the appropriate placement of the buildings with respect to the current conditions (i.e., slope, vegetation areas). All building envelopes shall require plant surveys that shall be conducted at the appropriate time (individual blooming periods are shown in the biological report in Appendix H of this REIR);	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Prohibits planting/introduction of nonnative invasive plant species (such as acacia, French or Scotch broom, and pampas grass) within any portion of proposed lots, and prohibit planting/introduction of any nonnative species outside the development envelope; • Development of landscape guidelines that encourage the use of native species indigenous to the area as ornamentals and prevent the use of invasive exotics; • Limits the use of fencing to designated development envelopes, and prohibit fencing of parcel boundaries in order to maintain areas for wildlife movement; • Restricts direct disturbance or removal of native vegetation to designated development envelopes, as planned, through project covenants, codes and restrictions (CC&Rs), through dedication of a conservation or open space easement, or other similar method (The project applicant currently proposes dedication of scenic easements over all portions of the site outside designated development envelopes). • Establishes lot restrictions and common open space regulations that limit uses and prescribe management responsibilities in private and common open space areas beyond the building and development envelopes identified in the final map. • Defines the conservation (scenic) easements dedicated to an entity acceptable to the County of Monterey. These conservation easements are legally binding use restrictions recorded on privately owned land that can provide a high degree of protection to certain areas on the property while allowing the rest of the land to be developed and used at the owner's discretion. Conservation easements to the benefit of the County of Monterey should be recorded with the sale of the lot and	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	should run with the land regardless of the number of times the land is sold. Such easements should be set aside for as much of the private open space on the property as is feasible to guarantee the long-term preservation of the site's overall biological resource values. Examples of the types of restrictions that should be considered in these conservation easements include the following: - Relinquishment of all development rights within the easement area; - Maintenance of natural habitat; - Pesticide use restrictions; - Only compatible public recreation uses allowed within easement lands, not uses that cause disturbance to native vegetation and wildlife; - Restricted trails for pedestrians, hikers and cyclists within easement lands; - No vehicles of any kind allowed in easement lands except for those required by the habitat/open space manager in performance of habitat monitoring or maintenance activities; - No alteration of land including grading, disking, compacting, soil removal or dumping shall be allowed unless the work is for the purpose of habitat management/restoration and authorized by the habitat/open space manager; - No removal of flora or fauna from the easement area including mowing or weed whacking unless authorized by the habitat/open space manager; - Limitations/restrictions will be placed on construction of permanent or temporary facilities (e.g., picnic tables or portable toilets) within the easement areas in accordance with the goals of the open space management program; - Leash laws within the easement areas must be enforced; and	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	- Right of inspection of the easement area by the easement holder and habitat/open space manager.	
Potentially Significant (Biological Resources Impact 2) - Impacts to Monterey pine/coast live oak forest.	**4.9-2:** The project applicant shall submit a Forest Mitigation and Monitoring Plan, which will include the following: • Replacement of lost Monterey-pine coast live oak forest acreage at on a 3-to-1 ratio (3 acres for every 1 acre lost to project development), based on the sizes of the trees removed, appropriate sized plantings will be required as replacement specimens for those specimens lost due to development • Use of Monterey pines grown from seed collected in locations bordering the tree clusters from which the trees were removed. Replanting should avoid open spaces where currently there are no trees unless there is evidence of soil deep enough and of good enough quality to support the plantings. • Monitoring of the tree plantings for five years or until 70 percent are successful. • Provide an adaptive management scenario if the success criteria are not being met. • Require protection of oak and Monterey pine trees located outside designated development envelopes unless proven to be diseased or unhealthy as determined by a qualified arborist. • Require tree removal permits and tree replacement for removal of any oaks that may occur as part of future lot construction, pursuant to County regulations, and require replacement of removed Monterey pine trees from onsite genetic stock. **4.9-3:** To reduce the loss of individual trees, replacement planting of 1:1 shall be conducted by planting seedlings in areas determined appropriate by a professional forester. The	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	following is recommended: • A tree replacement plan shall be prepared by a qualified professional forester, arborist, or horticulturist, and will be subject to review and approval by the County Planning & Building Inspection Department, that includes the following: - Identify tree planting areas with suitable soils that will also fulfill project landscape plans and visual screening objectives, as feasible. - Identify monitoring requirements, such as a site inspection at the end of the first winter after planting to confirm numbers, species of replacement, and locations of plantings. Annual inspections over five years shall confirm the objective of the plan, such as the survivability of the plantings, and the percentage of healthy trees. - Transplanting of onsite native seedlings within construction areas and protection of those occurring near construction areas to maintain natural diversity and adaptation. - Replacement oaks shall be of local genetic stock. - All replacement pines shall be transplanted or grown from seeds collected from asymptomatic trees, found within 500 feet in elevation of the planting site. Overabundant direct seeding of open pollinated pine seed or 4:1 planting of open pollinated seedlings is recommended for a portion of the pine replacement trees with thinning to appropriate spacing after 3 years under the direction of a professional arborist. - Most replacement shall be of a small size (cell or one gallon) as studies have shown that small trees more readily adapt to a site and grow larger over the mid- to long-term. **4.9-4:** To avoid mechanical damage to pines not slated for removal, the following measures are recommended:	

Impacts	Mitigation Measures	Level of Significance After Mitigation
	• Pines adjacent to ones slated for removal will be removed individually; • Minimize mechanical tree damage such as skinning of the trunks, partial pushovers, etc. during construction or harvesting operations. Tree damage from recent logging activities favors all kinds of bark beetles; • Build barricades around trees to prevent mechanical damage by equipment in yard and landscape environments. Try to minimize root damage by keeping trenching and digging to a minimum; • During landscaping operations, maintain final soil level around tree trunks and roots at the same height as it was before construction; and • Direct all drainage from developed areas away from low or flat areas near trees to prevent saturation of soils at the base of trees.	
Potentially Significant (Biological Resources Impact 3) - Fragmentation of the Monterey pine forest will increase the potential for pitch canker and other diseases.	**4.9-5:** There is no proven method available that will prevent pitch canker from infecting susceptible trees. To prevent the spread of the fungus into the pines within the project site, some actions can be taken to slow down the spread of the fungus, including the following: • Delay removal, thinning operations or severe pruning until winter when beetle activity has declined if bark beetles are active in the area; • Remove storm- or lightning-damaged pine trees as quickly as possible. Damaged pines are ideal sites for the start of bark beetle infestations; • Debark recently killed trees and branches with timely chipping and removal of diseased or insect infested tree material from nearby susceptible trees. In addition, all trees proposed for removal shall be removed carefully so as not to injure (including breaking nearby branches,	Less than significant.

Impacts	Mitigation Measures		Level of Significance After Mitigation
		cutting trunks, etc.) adjacent trees not slated for removal. There are some Monterey pines that are resistant to the pathogen and these trees should be used as a seed-base for replanting. • Encourage vigorous tree growth. Susceptibility to beetle attack increases with stand age and slow diameter growth.	
Potentially Significant (Biological Resources Impact 4) - Disturbance of Oak Trees.	**4.9-6:**	Submit final Forest Management Plan subject to review and approval by the County Planning & Building Inspection Department that includes the following: • Prohibit grading, filling, and all subdivision construction activity within the dripline of oak trees, where possible. Each tree or group of trees in the construction area designated to remain shall be protected by an enclosure (5-foot temporary fence), prior to the beginning of construction. The location of the fence is normally at the dripline of the tree; • Develop CC&Rs that shall include measures for protection of oak trees on individual lots as part of future home construction, as well as guidelines for appropriate landscaping management to protect remaining oaks. Wherever possible, future homes should be sited outside of the dripline of any oak. Generally, irrigation should be prohibited within an area 1/3 larger than the dripline of oak trees; and • Direct all drainage from developed areas away from low or flat areas near trees to prevent saturation of soils at the base of trees.	Less than significant.
Potentially Significant (Biological Resources Impact 5) - Removal of Coastal Sage Scrub.	**4.9-7:**	Clear definition of the development envelope for each lot in the grassland areas, restrictions of the remainder of the lots, and implementation of the Tentative Map (Mitigation Measure 4.9-1) that details the general open space management measures and conservation easement	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	designations on lots should reduce some of the impacts to coastal sage scrub. In addition, to reduce the impacts to coastal sage scrub, the following mitigation measures are recommended: Submit final Open Space Management Plan subject that includes the following: • Protection and enhancement for the long-term viability of the habitat types onsite and the plant and animal species they support; • Incorporation into project documents that are passed on to homeowners. The plan should include, but not be limited to, the following: - Limiting native vegetation removal and other disturbances in areas not specifically designated for buildings and other facilities to minimize losses to coastal sage scrub and grassland areas with high concentrations of native species as well as Monterey pine, coast live oak forest; - Protection of sensitive plant species identified herein (and in subsequent studies) through design, setbacks, salvage and relocation, and other means wherever feasible; and - Designation of trails and other directed access to/through common open space areas to reduce inadvertent habitat degradation.	
Potentially Significant (Biological Resources Impact 6) - Removal of Grasslands.	**4.9-8:** Submit a final Grassland Management Program that addresses the following: • Preservation, enhancement, and restoration of native grasslands on the site. The Grassland Management Program shall include: - Clear definition of the building footprint for each lot in the grasslands areas, restrictions on the remainder of the lot; and - Description of the implementation of an active	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	grassland management program for both the lots and the common open space areas. • The Grassland Management Program shall include the following requirements: - Light rotational, seasonally-timed grazing and/or appropriately timed mowing to reduce the cover of non-native annual grasses; - Preclude soil disturbance through cultivation; - Preclude the use of herbicides unless applied directly to invasive, non-native species; - Address the removal of Monterey pine seedlings in the native grasslands (either through mowing or chipping); - Address restoration in areas dominated by invasive species like French broom; and - Consider the possible use of fire management on both the common open space and private open space grassland areas. **4.9-9:** To reduce the acreage impacts to coastal terrace prairie, houses on each lot shall be placed outside the natural community and conservation easements shall be placed over the vegetation community. Landscape plantings shall be restricted to native plant species adapted to summer fog incursion zone to prevent the further spread of non-native species into the native grasslands.	
Potentially Significant (Biological Resources Impact 7) - Removal of Special Status Plant Species.	**4.9-10:** To reduce the potential "take" of individuals the following are recommended: • Prior to construction of roadways or individual houses, a botanical survey shall be conducted during the appropriate blooming period for each species. If no individuals are observed no further action is required. If individuals are found a report shall be prepared, as explained in the Monterey County General Plan Policy 3.3, detailing the habitats affected by the project, the	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	species potentially affected by the project, and the appropriate mitigation measures to reduce the "take" of individuals. Informal consultation with CDGF/USFWS may be required. CDFG/USFWS may require further actions. • If individuals are found a report shall be prepared, as explained in the Monterey County G.P. Policy ER 3.3, detailing the habitats affected by the project, the species potentially affected and appropriate mitigation measures to reduce "take" of individuals. Informal consultation with the USFWS will be required if Monterey spineflower are found. Mitigation may include but not be limited to avoidance of populations, restoration, maintenance, and enhancement and obtaining an Incidental Take Permit from the USFWS and notification with the CDFG.	
Potentially Significant (Biological Resources Impact 8) - Removal of Nesting Habitat.	**4.9-11:** To avoid a take and/or further evaluate the presence or absence of raptors, the following is recommended: • Removal should be conducted outside the nesting season, which occurs between approximately March 1 and August 15. If grading before March 1 is infeasible and groundbreaking must occur within the breeding season, a pre-construction nesting raptor survey should be performed by a qualified biologist. If no nesting birds are observed, no further action is required and grading may occur within one week of the survey to prevent "take" of individual birds that may have begun nesting after the survey. If birds are observed onsite after February 1 it will be assumed that they are nesting onsite or adjacent to the site. If nesting birds are observed, ground breaking will have to be delayed until after the young have fledged, as determined by bird surveys conducted by a qualified biologist, or after the nesting season. • The CDFG Central Coast Regional office does allow	Less then significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	grading/or tree removal to occur if nesting birds are observed onsite, providing that a 100- to 500-foot buffer zone is created around the observed nest. Because nests may occur in the middle of the grading area, this method is not advised. **4.9-12:** To avoid a take and/or further evaluate the presence or absence of passerines, the following is recommended: • Grading within the grasslands shall be conducted outside the nesting season, which occurs between approximately March 1 and July 31. If grading before February 1 is infeasible and groundbreaking must occur within the breeding season, a qualified biologist should perform a pre-construction nesting bird survey of the grasslands. If no nesting birds are observed, no further action is required and grading may occur within one week of the survey to prevent "take" of individual birds that may have begun nesting after the survey. If birds are observed onsite after February 1 it will be assumed that they are nesting onsite or adjacent to the site. If nesting birds are observed, ground breaking will have to be delayed until after the young have fledged, as determined by bird surveys conducted by a qualified biologist, or after the nesting season. • The CDFG Central Coast Regional office does allow grading to occur if nesting birds are observed onsite, providing that a 75- 100-foot buffer zone is created around the observed nest. Because nests may occur in the middle of the grading area, this method is not advised.	
Potentially Significant (Biological Resources Impact 9) - Removal of Bat Habitat.	**4.9-13:** To avoid "take" and/or further evaluate presence or absence of roosting bats, the following measures are recommended: • Snags shall not be removed without first being surveyed by a qualified bat biologist, 2-4 weeks prior to planned tree removal to determine whether bats are roosting inside	Less then significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	the trees. If no roosting is observed, the snag shall be removed within 1 week following surveys. If bat roosting activity is observed, limbs not containing cavities, as identified by the bat biologist, shall be removed first, and the remainder of the tree removed the following day. The disturbance caused by limb removal, followed by a one night interval, will allow bats to abandon the roost. • Remove large trees (<24" diameter at breast height [dbh]), or trees with cavities, between September 1 and October 30. This time period is after young are volant (flying), but before expected onset of torpor (winter inactivity). Smaller trees may be removed at any time. • If trees larger than 24" dbh, or trees with cavities must be removed outside this time period, night emergence surveys should be conducted by a qualified bat biologist, 2-4 weeks prior to planned tree removal to determine whether bats are roosting inside the trees. If no roosting is observed, the tree should be removed within 1 week following surveys. If bat roosting activity is observed, limbs not containing cavities, as identified by the bat biologist, shall be removed first, and the remainder of the tree removed the following day. The disturbance caused by limb removal, followed by a one night interval, will allow bats to abandon the roost.	
4.10 CULTURAL RESOURCES		
Potentially Significant (Cultural Resources Impact 1) - Archaeological and Paleontological Resources.	**4.10-1:** If during the course of construction, cultural, archeological, historical, or paleontological resources are uncovered at the site (surface or subsurface resources), work shall be halted immediately within 50 meters (165 feet) of the find until a qualified professional archaeologist or paleontologist can evaluate it. The County of Monterey Planning and Building Inspection Department and a qualified archeologist shall be immediately contacted by the responsible individual present	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	onsite. When contacted, the project planner and the archaeologist shall immediately visit the site to determine the extent of the resources and to develop proper mitigation measures required for the discovery.	
4.11 AESTHETICS		
Less than Significant Impact - Alteration of Existing Visual Character or Quality.	No mitigation measures are required.	Less than significant.
Potentially Significant (Aesthetics Impact 1) - New Sources of Light and Glare.	**4.11-1:** Prior to the issuance of a grading permit, the applicant shall submit a Tentative Map, which will be subject to review and approval by the Monterey County Planning and Building Inspection Department (MCPBID). The MCBPID establishes envelopes on each proposed lot to define the building area that result in minimal grading and protect the public viewshed by avoiding ridgeline development and preserving existing screening vegetation. Home sites in building envelopes on the bluffs overlooking Carmel Valley Road should be limited in building height, as needed, to reduce visibility and screen buildings from Carmel Valley Road. **4.11-2:** Prior to issuance of a grading permit, the applicant shall submit a design guidelines and landscaping plan subject to review and approval of the Monterey County Planning and Building Inspection Department. The plan shall utilize a rural-agricultural architectural theme for the proposed planned unit development, break up building mass of the units closest to Carmel Valley Road, and implement landscaping materials compatible with the surrounding area. This plan shall also address the sewage treatment facility. Landscaping shall incorporate mature trees in the area nearest to Carmel Valley Road. **4.11-3:** Prior to issuance of a building permit, the project applicant shall dedicate open space easements as shown on the	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
	Preliminary Project Review Map through dedication of a scenic easement or other suitable method to insure its long-term protection. **4.11-4:** The applicant shall submit a public space (including public roadways) lighting plan subject to review by the Monterey County Planning and Building Inspection Department. The plan shall identify the use of non-reflective materials, subdued colors, and lighting that does not create offsite glare. **4.11-5:** The type, height, and spacing of security and parking lighting shall conform to the County standard, which requires that lighting be directed downward and be of a minimum intensity that will allow for proper safety.	
4.12 POPULATION, HOUSING, AND EMPLOYMENT		
Less than Significant Impact - Population Generation.	No mitigation measures required.	Less than significant.
Less than Significant Impact - Development of Residential Units.	No mitigation measures required.	Less than significant.
Less than Significant Impact - Employment.	No mitigation measures required.	Less than significant.
4.13 PUBLIC SERVICES AND UTILITIES		
Less than Significant Impact - Increased Demand for Fire Services.	No mitigation measures required.	Less than significant.
Less than Significant Impact - Increased Demand for Sheriff Services.	No mitigation measures required.	Less than significant.
Less than Significant Impact - Increased Demand for School Services.	No mitigation measures required.	Less than significant.
Less than Significant Impact - Increased Solid Waste Generation.	**4.13.4-1:** The proposed project shall participate in curbside collection of bottles, cans, paper, and yard waste.	Less than significant.

Impacts	Mitigation Measures	Level of Significance After Mitigation
Potentially Significant (Public Services and Utilities Impact 1) - Increased Demand for Recreational Services.	**4.13.5-1:** The applicant shall either dedicate land or pay an in-lieu fee, which will be calculated after the tentative map has been approved and prior to recordation of the final map. **4.13.5-2:** The applicant, in coordination with the MCPD, shall dedicate trail easements to the County for the connection of future trails with existing trails. The new public recreational trail shall, at a minimum, accommodate future and feasible connections to Canada Woods North and Monterra Ranch trail route and the possibility of other regional trail links to facilitate a regional trail system as outlined in the Greater Monterey Peninsula Area Plan. **4.13.5-3:** Any agreed upon trail easement/alignment shall be identified on the tentative map for approval and on the Final Map for recordation.	Less than significant.
Less than Significant Impact - Increased Demand for Electrical and Natural Gas Services.	No mitigation measures required.	Less than significant.
Less than Significant Impact - Increased Demand for Phone Services.	No mitigation measures required.	Less than significant.
5 CUMULATIVE IMPACTS		
	5-1: The applicant shall pay a fair share contribution towards improvements for Highway 1.	
	5-2: At the intersection of Highway 68/Laureles Road: • Signal modification and widening of the intersection to utilize overlap phasing to have northbound right turn lanes on Laureles Grade Road go simultaneously with the westbound Highway 68 left-turns. Modify east bound Highway 68 approach to include one through lane and one shared though/right-tern lane.	

SECTION 3
PROJECT DESCRIPTION

3.1 Project Location

The project site is located in the Carmel Valley, a major northwest-southeast trending valley that is bounded by ridges of the California Coastal Range. Land use in the area consists primarily of a combination of rural-residential development and small-scale agricultural production. Development is generally concentrated in three areas on the valley floor. Commercial services are also available and on either side of the Carmel River. The Carmel River, which runs the length of the project area, is the principal surface water feature in the area. The river, its tributaries, and the Carmel Valley aquifer supply the majority of the Monterey Peninsula with water.

As shown on Exhibit 3-1, the project site is located approximately 2.5 miles east of Highway 1 on the north side of Carmel Valley Road. It is bounded on the south by Brookdale Drive residential subdivision; on the west by the senior community of Del Mesa Carmel and the 15-acre Roach Canyon open space area; on the east and northeast by Canada Woods and Canada Woods North subdivisions, respectively, and on the northwest by Jacks Peak County Park (Exhibit 3-2). The proposed project encompasses four parcels (APNs 015-171-10, 015-71-12, 015-381-13, and 015-381-14).

3.2 Project Characteristics

3.2.1 Site Characteristics

The project site is a predominately south facing slope divided by several small canyons that traverse from north to south. The terrain is hilly, with elevations ranging from 70 feet above sea level (asl) to 968 asl. Vegetation onsite consists primarily of Monterey pine and coastal live oak forests, coastal sage scrub, and grasslands. Relatively flat terraces running parallel to Carmel Valley Road are currently in use as an equestrian board and care facility and pasture land. The equestrian facilities consist of a barn with box stalls, hay storage, a tack room and office, outdoor fenced stalls, training ring, training arena, and fenced pasture areas. There are also two residential units that serve as housing for equestrian facility employees.

The Monterey Shale ("Carmel Stone") quarry remains on the southeastern portion of the property although operations ceased at the quarry over thirty years ago. In the southwest corner of the property area, near the entrance to Roach Canyon, are several concrete slabs that indicate the site of a concrete redi-mix bath plant, which operated until the 1970s.

A network of graded roads traverse the project site, primarily providing access to the western and eastern portions of the site. Access to Carmel Valley Road is currently provided at five locations which include Roach Canyon in the southwest corner of the project site, the equestrian facility driveway, the driveway servicing the employee housing units, the driveway that accesses the irrigated pasture near the intersection of Brookdale Drive and Carmel Valley Road, and "Old Thacker," which is a driveway that leads into the quarry area.

3.2.2 Project Features

As shown on Exhibit 3-3, the proposed project involves the subdivision of 891-acres into 94 market rate residential lots, 15 units of inclusionary housing (see Exhibit 3-4), and a 20.2-acre lot for the existing equestrian facility; 782.8-acres is proposed as open space. Other appurtenant facilities and uses would include separate systems for the distribution of potable water (e.g., wells and irrigation facilities), water tanks for fire suppression, a sewage collection and treatment system, waste water treatment system, drainage system, internal road system, common open space, tract sales office, and security gate. Site improvements would also require approximately 100,000 cubic yards of grading, and a tree removal permit.

The Carmel Valley Master Plan (CVMP) guides land use on the project site. The northerly portion of the property, which contains 494-acres, is designated by the CVMP as Rural Density Residential 5+ acres/unit and is zoned RDR/10-D-S (Rural Density Residential, 10-acres/Unit-Design Control-Site Control); the southern portion is designated Low Density Residential 5-1-acres/unit and is zoned LDR/2.5-D-S (Low Density Residential/2.5 Design Control-Site Control). The project is consistent with these CVMP and zoning ordinance designations for the site.

Circulation

Project implementation will result in the upgrade and extension of the existing roadway network to create access to the residential units (see Exhibit 3-3). More specifically, the road network will access Carmel Valley Road at one main location. The main entrance serving the 94 single-family residences is proposed opposite the intersection of Brookdale Drive and Carmel Valley Road. The present access to the equestrian facility from Carmel Valley Road would be eliminated and access provided via the main entrance and the internal road system.

Approximately 100,000 cubic yards of grading will be required to upgrade the existing onsite circulation system. Portions of the roadway systems will be graded in excess of 30 percent slopes. This grading would require a waiver (e.g., variance) of County regulations prohibiting development on slopes in excess of 30 percent to allow for the construction of the internal access roads.

The project will have one access road, September Ranch Road, which will connect with the fourth (north) leg at the existing Carmel Valley Road/Brookdale Drive intersection. There is an existing driveway in the vicinity of the equestrian center. Upon completion of the project, the driveway will serve as an emergency vehicle access. As discussed in Section 4.6 of this Draft REIR, channelization will be required for both the eastbound and westbound approaches of the intersection of Carmel Valley Road/Brookdale Drive/project access; additionally, a signal will be installed at this intersection.

Water

The proposed project property is located within the Carmel River watershed. The property has relied upon wells since the early 1930s as water availability is a critical problem in the Carmel Valley. In 1995, the State Water Resources Control Board (SWRCB) issued Order no. 95-10 which found that California American Water Company (Cal-Am), the primary supplier of water to the Monterey Peninsula, had diverted excess water from the Carmel River basins without a valid basis of right.

Subsequently, Cal-Am was ordered to substantially limit its diversions. In light of the SWRCB decision, the Monterey Peninsula Water Management District (MPWMD) requested that the property develop a mutual water supply company and not connect to the Cal-Am system. All development which requires a water supply from the County is subject to a County adopted water allocation formula and/or ordinances.

The project will require potable water for human and animal consumption to supply the 94 single-family lots and 15 inclusionary housing units as well as the existing equestrian care and board facility. In addition, the project will need water for irrigating landscape features and pastures. At the request of the MPWMD, potable water would be provided by a small mutual water system independent of the Cal-Am water system. The water supply for the project is proposed to originate from groundwater pumped from wells within the terrace area of the project, which is underlain by a small aquifer. A lengthy, multi-phase investigation has been conducted by the applicant, and presented in this Draft REIR, to establish the degree of connectivity between the project terrace area, the adjacent, much larger, Carmel Valley Aquifer, and the overall availability of water (Section 4.3, Groundwater Supply and Availability).

Wastewater Treatment and Disposal

Wastewater is proposed to be treated onsite at a wastewater treatment facility located within Parcel B in the southeastern portion of the project site (Exhibit 3-3). The basic wastewater facilities will consist of a STEP collection system with on-lot septic tanks; a central enclosed treatment plant providing tertiary level reclaimed effluent quality plus nitrogen removal; a wet-weather storage or treated effluent in a lined reservoir located at the former quarry site; and final effluent disposal via spray irrigation of pasture land and recycling for residential landscape watering.

Drainage and Stormwater Runoff

A registered civil engineer has designed a drainage plan for detaining runoff and sediment (Section 4.4, Hydrology and Water Quality). Stormwater will be collected and stored in seven detention basins, located throughout the site. Existing drainage facilities located along and underneath Carmel Valley Road will be upgraded to accommodate the anticipated increase in runoff. Monitoring and maintenance of onsite facilities will be the responsibility of the Homeowner's Association, through Covenants, Conditions, and Restrictions (CC&Rs).

Tree Removal

Implementation of the proposed project will require the removal of approximately 3,582 trees. This includes 890 coast live oaks and 2,692 Monterey pines.

Open Space

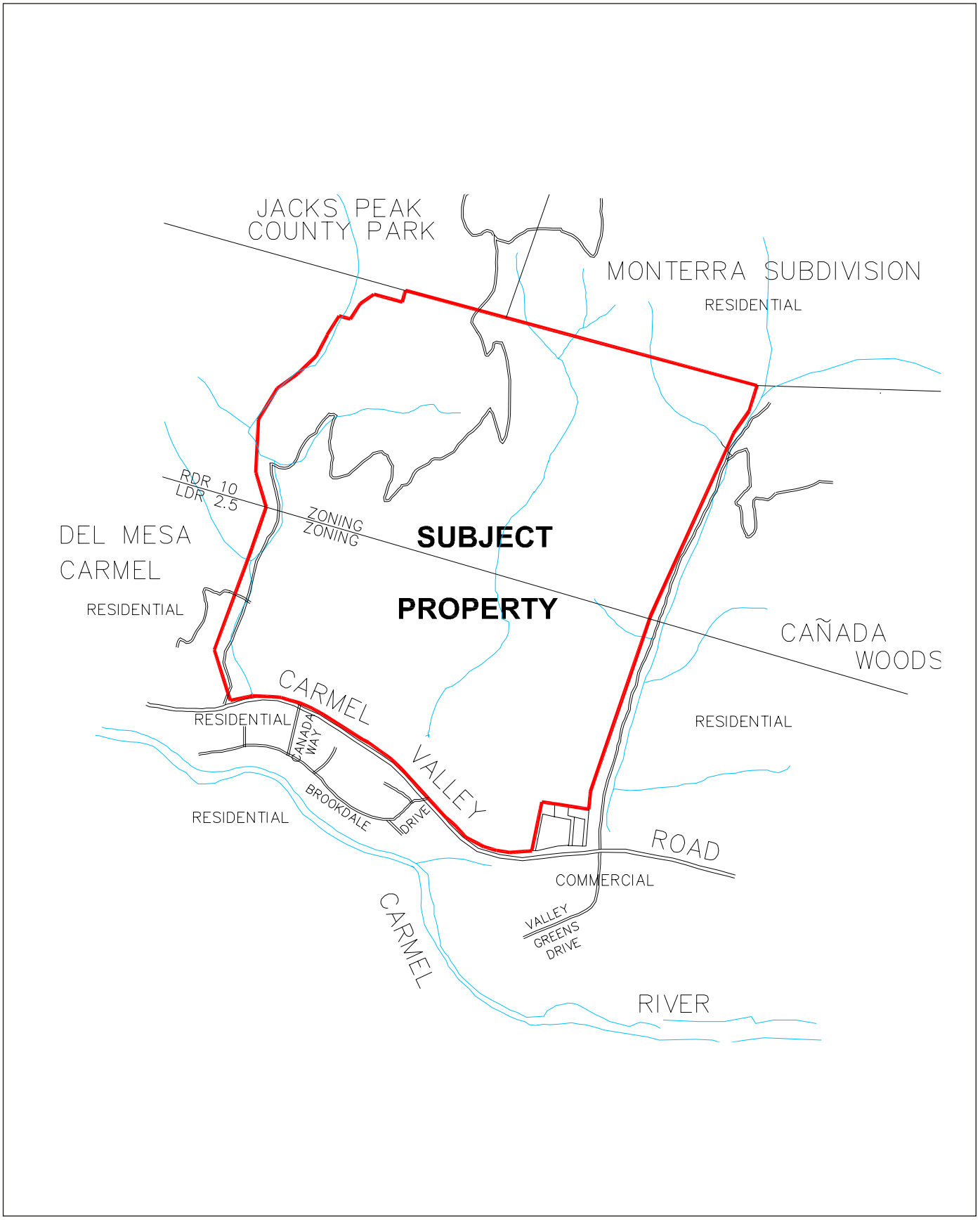
In addition to the proposed residential development, the revised Preliminary Project Review Map depicts common areas and open space as identified below:

Total Gross Area ..... 891.0 acres
Common Area Open Space ..... 463.4 acres
Private Open Space ..... 319.4 acres
Total Open Space ..... 782.8 acres (87.9% Total Gross Area)

Source: Automobile Club of Northern California, 2002.

Michael Brandman Associates

Exhibit 3-1
Regional Location Map



Source: Whitson Engineers, December 2002.

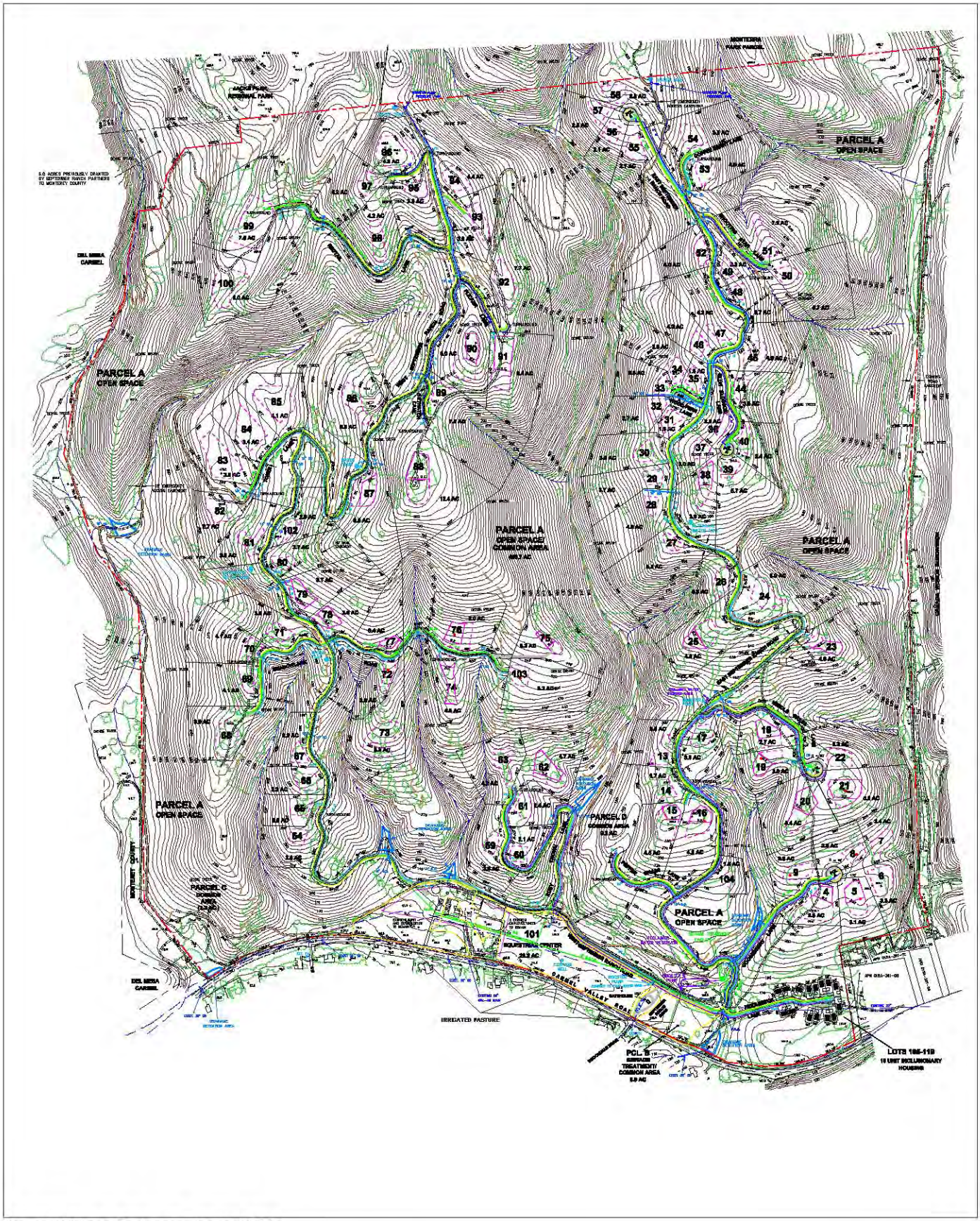
NORTH

3000 1500 0 3000

SCALE IN FEET

Michael Brandman Associates

Exhibit 3-2
Local Vicinity Map



Source: Whitson Engineers, January 2003.

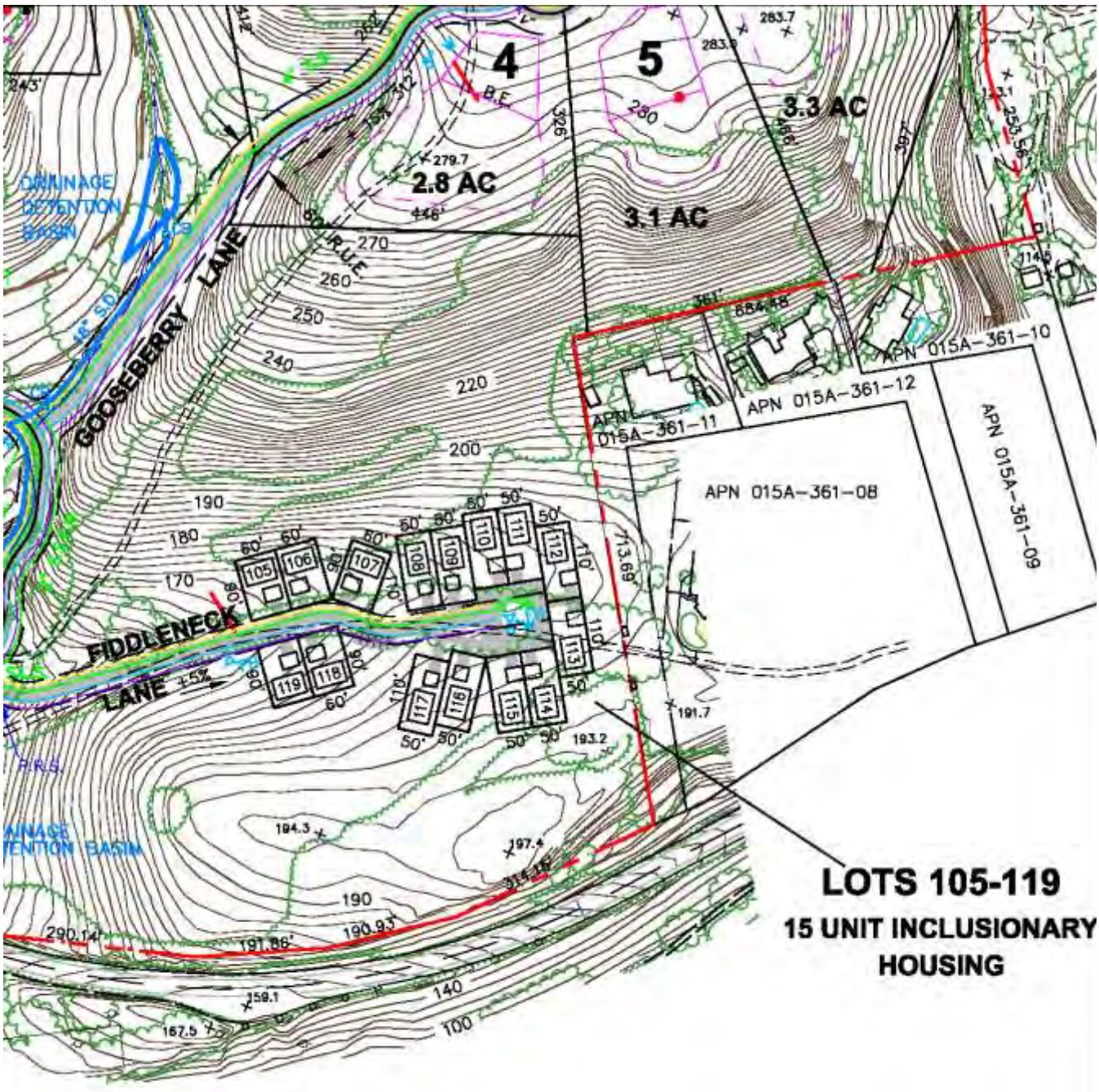
NORTH

390 195 0 390

SCALE IN FEET

Michael Brandman Associates

Exhibit 3-3
Site Plan



Source: Shaw Architecture Planning, Inc, Whitson Engineers, 2003.

NORTH

180 90 0 180

SCALE IN FEET

Michael Brandman Associates

Exhibit 3-4
Inclusionary Housing Plan

Project Phasing and Schedule

Buildout of the proposed project is expected to occur over a 10-year period. The actual construction and ultimate occupancy of the individual residences would depend on future housing market conditions. The general phasing schedule identified on the Preliminary Project Review Map is as follows:

Phase 1..... Lots 4-9, Lots 13-22, Lot 101, 104, Lots 105-119 (Inclusionary Units), and Parcels B, C, and D
Phase 2..... Lots 23-40 and Lots 44-58
Phase 3..... Lots 59-85, 102, 103
Phase 4..... Lots 86-100

Please note, that Parcel A (Open Space) will be included proportionally in each phase.

Phasing could be combined as determined by the subdivider and revised as approved by Monterey County. The timing of the phases would be determined by the subdivider, within the limits of the approved Preliminary Project Review Map.

3.3 Project Objectives

As proposed, consistent with the Housing Element of the Monterey County General Plan the project will result in the development of 94 market rate residential lots and 15 units of inclusionary housing. The existing equestrian center operations will continue onsite with project implementation. The project objective is to provide market rate and low- and moderate-income housing in accordance with the existing County ordinances and the CVMP.

3.4 Intended Uses of the Draft REIR, Responsible Agencies, and Approvals Needed

This Draft REIR is being prepared by the County of Monterey to assess potential environmental impacts that may arise in connection with actions related to implementation of the proposed project. The County of Monterey is the lead agency for the proposed project and as such the County has discretionary authority over the project and the project approvals. Discretionary approvals include the following:

- Preliminary Project Review Map and Vesting Tentative Map to allow the subdivision of the property;
- Use permit for the equestrian center, utility area, tract sales office, and checkpoint/security gate;
- Use permit for the proposed sewage treatment facilities;
- Request for waiver of the County policy prohibiting development on slopes in excess of thirty percent;
- Use permit for the removal of approximately 3,582 trees; and
- Grading permit for approximately 100,000 cubic yards of grading.

3.5 Other Responsible and Trustee Agencies

The Draft REIR will also provide environmental information to responsible and trustee agencies and other public agencies, required to grant approvals/permits or coordinate with as part of project implementation. The agencies and their possible roles/duties include, but are not limited to, the following:

1. Monterey Peninsula Water Management District
   a. De-annexation of the project site from Cal-Am service area
   b. Creation of new Water Distribution System and final determination (e.g., issuing permits) of water availability under Rule 22

2. Regional Water Quality Control Board
   a. Sanitary Sewer Discharge Permit
   b. National Pollution Discharge Elimination System Permit

3. Local Agency Formation Commission
   a. Annexation to Mid-Carmel Valley Fire District
   b. Possible annexation to Carmel Area Wastewater District (CAWD)

SECTION 4
ENVIRONMENTAL IMPACT ANALYSIS

The September Ranch Subdivision project Draft REIR provides impact analysis for environmental topics determined in the Initial Study/Notice of Preparation (Appendix A) to have potentially significant impacts. Each topical section includes the following information: description of the environmental setting (existing conditions), including related plans and policies; identification of thresholds (standards) of significance; analysis of potential project effects; identification of mitigation measures, if required to reduce the identified impacts; and identification of levels of significance after mitigation. CEQA Guidelines Section 15064.7 addresses thresholds of significance and encourages each public agency to develop thresholds of significance through a public review process. Subsequently, these thresholds must be published and adopted by agency ordinance, code, or regulation. The thresholds used in this Draft REIR were derived from several sources including the County of Monterey General Plan, previous EIR's prepared by the County of Monterey, the CEQA Guidelines and checklist, adopted thresholds from other agencies (such as the Bay Area Air Quality Management District), and the professional opinions of the Monterey County and their staff.

The impacts and mitigation measures section of this Draft REIR describes the significant environmental effects of the proposed project. This section provides a discussion of project-specific impacts. Analysis of cumulative impacts is provided in Section 5, Cumulative Impacts, of this Draft REIR. Impacts resulting from implementation of the proposed project will be described as less than significant, significant, or significant and unavoidable. Mitigation measures will be recommended for each significant environmental effect identified in this Draft REIR. Although not required by CEQA, mitigation measures may be recommended for less than significant impacts to further reduce their potential effects on the environment.

A separate Mitigation Monitoring and Reporting Program (MMRP), as required by Public Resources Code 21081.6, will be included in the Final REIR that outlines the mitigation measures and the monitoring and reporting methods that will be employed. The Monterey County Board of Supervisors will consider adoption of the MMRP when certification of the Final REIR is considered.

4.1 Land Use and Planning

Land use issues addressed in this section include the related plans and policies governing existing and proposed land use in the project area and the project's consistency with those plans and policies. This section also includes a discussion of the existing and proposed land use in the project area and the compatibility of land use conditions within the project area.

4.1.1 Environmental Setting

Regional Setting

The project site is located in the Carmel Valley, a major northwest-southeast trending valley that is bounded by ridges of the California Coastal Range (see Exhibit 3-1). Existing land use in the 28,000-acre Carmel Valley area consists of a combination of rural and residential development as well as small-scale agricultural production. Approximately 25 percent of the Carmel Valley is developed. Development is generally concentrated on the valley floor near Highway 1, in the mid- valley area of Robinson Canyon Road, and in the vicinity of Carmel Valley Village. The Carmel River, which runs the entire length of the planning area, is the primary surface water feature in the area.

Principal traffic circulation access throughout the Valley is provided via Carmel Valley Road. Currently, traffic conditions are extremely congested during peak hours along several sections of this corridor. The intersection of Carmel Valley Road and Highway 1 currently operates at LOS F. Access from Highway 68 is via Laureles Grade Road, a two lane state highway. Laureles Grade Road currently does not experience significant delays, but since the road is steep and curved, traffic moves at low maximum-design speeds.

Local Setting

The project site is a predominately south-facing slope divided by several small canyons that traverse from north to south. The terrain is hilly, with elevations ranging from 70-feet above sea level (asl) to 968 asl. Onsite vegetation consists primarily of Monterey pine and coastal live oak forests, coastal sage scrub, and grasslands.

Currently, the only activities onsite are associated with the equestrian boarding and care center. Facilities consist of a barn with box stalls, hay storage, tack room, office, outdoor fenced stalls, training ring, training arena, and fenced pasture areas. There are also two residential units that house equestrian center employees. A former quarry, which ceased operations over thirty years ago, still exists in the southeast portion of the project site.

A network of graded roads traverses the project site, primarily providing access to the western and eastern portions of the site. Access to Carmel Valley Road is provided at five locations.

As shown in Exhibit 3-2, the project site is bounded on the south by Brookdale Drive residential subdivision; on the west by the senior community of Del Mesa Carmel; on the east and northeast by the approved, but not fully developed, 54-lot Canada Woods and Monterra Ranch residential subdivision bordered on the northwest by Jacks Peak Regional Park; and on the west by the 15-acre Roach Canyon open space area owned by the County of Monterey. The 15-acre park site is maintained as open space and there are no plans to develop the site for specific public use. Presently,

Monterey County Parks Department has no established trail connection from Roach Canyon to Jacks Peak Regional Park. Any use of Roach Canyon open space area must be coordinated with the Parks Department.

Relevant Plans and Policies

Several plans and programs guide development in and around the project area including, but not limited to, elements of the County of Monterey General Plan; Carmel Valley Master Plan (CVMP), a subcomponent of the General Plan; the County of Monterey Zoning Ordinance (Title 21 of the Monterey County Municipal Code); and the Monterey County Inclusionary Housing Ordinance. Regional planning programs are discussed within individual sections of this Draft REIR (e.g., Regional Transportation Plan is discussed in Section 4.6, Traffic and Circulation; Bay Area Air Quality Management District 2000 Clean Air Plan is discussed in Section 4.7, Air Quality; Monterey County Bay Area of Governments Regional Housing Needs Plan is discussed in Section 4.12, Population, Housing, and Employment).

Carmel Valley Master Plan

The CVMP is one of eight subcomponents of the 1982 County of Monterey General Plan. The CVMP contains goals, plans, and policies intended to guide future land use in the planning area.

The CVMP establishes a 20-year total of 1,310 existing and newly created lots. These include 572 existing lots of record as of December 9, 1986 and 738 new lots to be created subject to an allocation and subdivision evaluation system. The CVMP provides a phasing system tied to the land subdivision process in which development will be subject to an allocation system. The average annual rate of allocation will be limited to 37 lots (738 lots/20 years). Subdivisions may be approved up to the maximum number of lots for the life of the tentative map. However, as a general policy, no more than 25 lots per year may be developed in any subdivision. It is up to the discretion of the Board of Supervisors to authorize additional units per subdivision. Lots or condominium units created and designated for low- and moderate-income individuals are exempt from the annual allocation system, but will be subtracted from the 20-year quota.

A key component of the CVMP is the establishment of a subdivision system within the planning area. The subdivision evaluation committee ranks subdivision proposals based on conformance with the goals and policies of the CVMP. A project must achieve compliance with all relevant CVMP polices in order to be considered for approval. In order to gain approval, a project must score at least half the points possible within each evaluation criteria.

4.1.2 Project Impacts

Standards of Significance

The proposed project is considered to have a significant land use impact if the project will:

- Generate a conflict with any applicable land use plan, policy, or regulation;
- Create an incompatibility with existing or planned land uses onsite or adjacent to the project area; or

- Result in a substantial adverse change in the type or intensity of existing or planned land use in the area.

Impacts and Mitigation Measures

Less than Significant Impact - Land Use Compatibility: Land use compatibility is primarily determined by its compatibility with various characteristics associated with land use in adjacent areas. These characteristics include types of activities, noise, density, height/bulk, and/or appearance. The issue of compatibility in relation to other environmental topics, such as aesthetics and noise, is discussed in their respective sub-sections throughout Section 4, Environmental Impact Analysis, of this Draft REIR.

Compatibility with Onsite Land Uses

Implementation of the proposed project will result in 94 market rate single-family residential lots and 15 units of inclusionary housing. The project site is largely undeveloped with an existing equestrian center, which would be integrated into the proposed development of the September Ranch Subdivision. Onsite ancillary facilities that will support the proposed project include a wastewater treatment plant, a system for the distribution of potable water, water tanks for fire suppression, a drainage system, internal road system, and tract sales office and security gate. Since the site is primarily undeveloped, implementation of the proposed project is not expected to result in significant compatibility impacts with onsite land use. Moreover, the scale and density of the proposed residential units would be compatible and complement the existing equestrian facilities.

Compatibility with Surrounding Land Uses

Construction of the proposed project will introduce new single- and multi-family residential development in the project area. The project site is surrounded by existing and/or proposed residential land use and the introduction of residential land use similar in nature, scale, and density is considered consistent with the pattern of land use in the project area.

Moreover, the CVMP identifies procedures to determine allowable density within the project site. These include the following:

- The maximum density allowable under the land use designation for a parcel shall be divided into the total number of acres found with the parcel;
- The slope density formula proscribed in the Monterey County General Plan shall be applied to the parcel;
- All of the policies of the CVMP must be applied to the parcel. Any policies resulting in, either an increase or decrease in density would be tabulated; and
- The maximum density allowable according to the land use designation and the maximum density allowed under the slope density formula and plan policies should then be compared. The lesser of the two shall be established as the maximum allowable density under the CVMP.

The total area of the project site is 891-acres. As indicated previously, project development would include construction of 94 market rate lots and 15 units of inclusionary housing. Additionally, the project includes 463.4-acres of common area open space and 319.4-acres of private open space for a

total of 782.8-acres of open space. Therefore, nearly 88 percent of the project site would be preserved as open space.

Development under the CVMP land use designation allows for a maximum of 208 units; development under the slope density formula allows for a maximum of 269 units. Therefore, the proposed density of 110 units (including the existing equestrian facility) is less than the maximum density allowed under the CVMP land use designation and slope density formula. Hence, implementation of the proposed project is not expected to result in significant land use compatibility impacts with surrounding land use.

Consistency with Relevant Plans and Policies

This section will address the goals and policies of the CVMP as they apply to the September Ranch Subdivision project. The CVMP goals are intended to provide a conceptual framework to guide land use in the Carmel Valley. The following CVMP goals apply to the proposed project:

- To preserve the rural character of Carmel Valley;
- To maintain both physical and socio-economic diversity;
- To protect all natural resources with emphasis on biological communities, agricultural lands, the Carmel River and its riparian corridor, air quality, and scenic resources;
- To provide for an appropriate range of land use accommodated in a compact, logical pattern;
- In conjunction with County-wide goals, to provide the maximum feasible range of housing types;
- To provide for and maintain an adequate and esthetic circulation system;
- To promote public safety with respect to flooding, geologic hazards, excessive exposure to noise, and fire hazards; and
- To recognize that since orderly growth is essential to the success of the CVMP, all residential development would be evaluated within a managed growth framework.

The policies of the CVMP are intended to implement specific aspects of the CVMP. Listed below are land use policies that apply to the proposed project. All other CVMP policies are discussed in their respective sections throughout Section 4, Environmental Impact Analysis, of this Draft REIR.

General Plan Land Use Policies

CVMP Policy 26.1.23: Open space would be located between development areas to clearly define them and maintain a distinction between rural and suburban areas of the Valley.

CVMP Policy 26.1.29: Design and site control shall be required for all new development throughout the Valley, including proposals for existing lots of record, utilities, heavy commercial and visitor accommodations excluding minor additions to existing development where the changes are not conspicuous from outside the property. The design review process shall encourage and further the letter and spirit of the Master Plan.

CVMP Policy 26.1.33: The range of land use allowed (either with or without special approval) in any zoning district of Carmel Valley, shall only be those specifically designated by this plan and shall be considered consistent, as required by law.

Consistency Analysis: The proposed project is designed to be in accordance with the policies set forth in the General Plan and CVMP. The proposed project would require approval of a variance for any development on slopes in excess of 30 percent. This variance is being requested for development of roadways serving residential lots and will allow for flexibility in road placement to accommodate varying terrain and sensitive biological resources. As stated in the CVMP, exceptions may be granted for relaxation of roadway standards under CVMP Policy 39.2.7 (Section 4.6, Traffic and Circulation). Design of the project roadways is in accordance with the stipulations found in CVMP Policy 39.2.7, in that the design intent is to minimize environmental impacts.

The project will also allow for 463.4-acres of common area open space; in total, open space accounts for nearly 88 percent of the total site. This is consistent with CVMP policies, encouraging the use of open space as a buffer between developments that provide distinctions between rural and suburban areas within the Valley. The 94 market rate lots would be individually developed. As required, residential development would undergo design and site control review, which would assure the project's visual compatibility with the character of the Valley and the immediately adjacent areas.

Residential Land Use Policies

CVMP Policy 27.1.5: In the low-density residential areas, maximum densities are as shown in the Land Use Plan. However, attainment of maximum density in these areas is dependent on conformity of the proposed project to Plan goals and policies.

CVMP Policy 27.3.4: All land division approvals shall be based on and require full standard subdivision standards regardless of the number of lots created. Exception may be granted under Policy 39.2.7.

CVMP Policy 27.3.5: The Carmel Valley development limit shall consist of the existing 572 buildable lots of record plus 738 additional lots. The lots shall be subject to the quota and allocation system and the policies of the Plan governing deductions for additional units, caretakers, senior citizen, and low- and moderate-income units. This constitutes the 20-year buildout allowed by this Plan. The existing lots of record shall include the remaining 150 lots in the amended Carmel Valley Ranch Specific Plan.

CVMP Policy 27.3.6: All development proposals shall make provisions for low- or moderate-income housing in accordance with the Inclusionary Housing Ordinance, except that all housing shall build such units on-site. Low- and moderate-income residential units shall be counted as part of the total new residential units and subtracted yearly from the quota and not the allocation.

CVMP Policy 27.3.9: Provision for low- or moderate-income family housing shall be exempt from annual allocation provisions, but shall be subtracted from the 20-year buildout quota on the basis of one such unit reducing the remaining buildout by one unit. Furthermore, because of their substantially lower impact on resources and infrastructure such projects for senior citizens of low- or moderate-income may have twice the number of units normally allowed where it is determined to be

feasible and consistent with other plan policies. Such projects shall be subtracted from the 20-year buildout quota on a basis of two such units reducing the remaining buildout by one unit.

CVMP Policy 27.3.10: When an ownership is covered by two or more land use designations, the total allowable development should be permitted to be located on the most appropriate portion of the property.

Consistency Analysis: The proposed project density, 110 residential units including the equestrian facility, is less than the maximum density allowed under either the CVMP land use designation or the slope density formula. Roadway construction is proposed on slopes greater than 30 percent which is consistent with the standards set forth in CVMP Policy 39.2.7 (Section 4.6, Traffic and Circulation). Moreover, the site lies within two low-density land use designations. Consistent with the CVMP, the proposed low-density development (market-rate units) would be situated on land suitable for this type of development. In the same manner, the inclusionary housing units would be located on land generally suited for medium-density development.

The CVMP establishes a 20-year total of 1,310 existing and newly created lots. These include 572 buildable lots of record as determined on December 9, 1986 and a possible 738 new lots to be created subject to allocation and the subdivision evaluation system. Subdivisions may be approved up to the maximum number of lots for the life of the tentative map. However, as a General Plan policy, no more than 25 lots per year may be created in a subdivision. According to the Revised Preliminary Project Review Map and the Vesting Tentative Map for the proposed project, project implementation would occur over a four-year period and lots would be developed as outlined below:

Phase 1 ..... Lots 4-22, 101, and 104 Parcels B-E[1]

Phase 2 ..... Lots 23-58[2]

Phase 3 ..... Lots 59-85, 102, 103

Phase 4 ..... Lots 86-100

Lots or condominium units created and designated for low- and moderate-income individuals are exempt from the annual allocation system; however, the units will be subtracted from the 20-year quota. Thus, the proposed phasing for the project is consistent with the allocation system.

The inclusionary housing would be developed within Phase 1 of the proposed project. The 15 units represent 14 percent of the total units to be developed onsite. Approximately 587 units remain of the 738 new lots subject to the CVMP quota program as of April 2004. Consistent with the CVMP, the proposed project will reduce this number by 109 lots. Therefore, approximately 478 lots remain in the unallocated CVMP quota.

Open Space Policies

CVMP Policy 34.1.1.1: Clustering of development should be permitted only where it results in the preservation of visible open space and complies with other applicable policies.

[1] Parcels B-E are comprised of common area/open space, the wastewater treatment plant, and the inclusionary housing (which is exempt from the annual allocation system).

[2] Note that Lots 41-43 were eliminated from the Preliminary Project Review Map and Vesting Tentative Tract Map.

CVMP Policy 34.1.1.2: Clustering of development is discouraged except where it would result in the preservation of visible open space in critically sensitive areas or protect other natural resources. Clustering adjacent to vertical forms, although preferable to development in open spaces, will be considered in light of the visual sensitivity of the building site. The burden of proof is placed on project sponsors to demonstrate that the proposed cluster development is compatible with the policies of this plan.

Consistency Analysis: Consistent with the CVMP, in an effort to preserve visible open space and minimize impacts on sensitive areas and onsite natural resources, project implementation will include the clustering of the 15 inclusionary housing units. This is consistent with the County's Inclusionary Housing policies, as discussed in detail below. Overall, the project will allow for 463.4-acres of common area open space and, in all, open space accounts for nearly 88 percent of the total site. The 94 market rate lots will be individually developed. As required, the proposed project will undergo design and site control review, which will assure the project is visually compatible with the Valley and the adjacent area.

Monterey County Zoning Ordinance

The County of Monterey prepared and adopted a revised zoning ordinance in October 2001 that is applicable to the unincorporated areas outside of the coastal zone. The zoning ordinance, Title 21, reflects the land use designations identified in the General and Area plans throughout the County. The project site is within the "LDR/2.5-acres per unit – D-S-B-4" and "RDR/10-acres per unit – D-S-B-4" zoning districts. The existing residential zones mentioned above are identified in Title 21 as follows:

- LDR Low Density Residential
- RDR Rural Density Residential
- D Design Control
- S Site Plan Review
- B-4 Building Site Area and Setbacks

Consistency Analysis: The CVMP guides land use on the project site. The northerly portion of the property, which contains approximately 494-acres, is designated by the CVMP as Rural Density Residential 5+ acres/unit and is zoned RDR/10-D-S (Rural Density Residential, 10-acres/Unit-Design Control-Site Control); the southern portion is designated Low Density Residential 5-1- acres/unit and is zoned LDR/2.5-D-S (Low Density Residential/2.5 Design Control-Site Control). The project is consistent with these CVMP and zoning ordinance designations for the site.

County Inclusionary Housing Ordinance

To ensure availability of housing for low- and moderate-income households, the County Board of Supervisors adopted Inclusionary Housing Ordinance #3419. The ordinance requires that all new residential projects of seven or more lots in Monterey County provide low- and moderate-income units, or that the number of lots within a project must be an amount equal to or greater than 15 percent of the total number of units approved. Alternatively, other contributions can be made, including payment of in-lieu-of fees or offsite contributions of lots or units. The Board of Supervisors may

approve contribution alternatives when a developer demonstrates clear and convincing evidence that onsite contribution is not appropriate for the particular development. A residential development application will not be judged complete until the applicant has submitted plans and proposals that demonstrate the manner in which the requirements of the ordinance would be achieved.

Consistency Analysis: Currently, the project proposes to construct 15 residential units to be developed on 5.3-acres within the southwest corner of the site. The 15-unit inclusionary housing portion of the project is proposed for development in the early stages of the September Ranch Subdivision project. Based on requirements in Inclusionary Housing Ordinance #3419, at the time the application for the project was deemed complete by the MCPBID, the project applicant has included 15 units (15.9 percent) of low- to moderate-income housing on the project site. Fifteen units is consistent with the Inclusionary Housing Ordinance.

4.2 Geology and Soils

Several geotechnical reports were prepared for the 1998 Final EIR for the proposed project and have been incorporated into this section. Reports prepared for the proposed project and incorporated by reference include the Geologic and Geotechnical Feasibility Investigation (Terratech, Inc. 1996), Geologic Evaluation of Mapped Landslides (Terratech 1996), Technical Peer Review by Nolan Associates (June 1996), Preliminary Geological Feasibility Study (Geoconsultants 1995), and the Geologic Evaluation of Two Landslide Areas (Geoconsultants 1981). In addition, Kleinfelder, Inc. prepared a Geologic, Soils, and Drainage Assessment for the Draft REIR in February 2003. This is included in its entirety in Appendix B.

4.2.1 Environmental Setting

Regional Geology

The project area is located in the western portion of the Carmel River Valley. It lies within the Coast Ranges Geomorphic Province, a discontinuous series of northwest-southeast trending mountain ranges, ridges, and intervening valleys characterized by complex folding and faulting.

Geologic structures within the Coast Ranges Province are generally controlled by a major tectonic transform plate boundary. This right-lateral, strike-slip fault system extends from the Gulf of California, in Mexico, to Cape Mendocino, continues up the coast of Humboldt County in northern California and forms a portion of the boundary between two global tectonic plates. In this portion of the Coast Ranges Province, the Pacific plate moves north relative to the North American plate, which is located east of the transform boundary. Deformation along this plate boundary is distributed across a wide fault zone, which includes the San Andreas, Hayward, Calaveras, and San Gregorio faults. Together, these and other faults are referred to as the San Andreas fault system.

The large wedge of geologic material west of the San Andreas fault that generally is underlain by Cretaceous Age (about 140 to 65 million years old) granitic, basement rock is referred to as the Salinian Block. September Ranch is included within the Salinian tectonic block. The Salinian Block is bounded by the San Andreas fault on the east and the Sur-Nacimiento fault zone on the west. Geologically, the study area has a crystalline basement of Upper Cretaceous granitic rocks of the Salinian Block and older metasedimentary rocks of the schist of the Sierra de Salinas of probable pre-Cretaceous age.

Resting nonconformably upon these basement rocks in the Monterey area is a sedimentary section that ranges in age from middle Miocene to Holocene (about 24 million years ago to present) and has a composite thickness of as much as 3,600 feet. The Miocene rocks record quiet marine waters with abundant microscopic life forms (forams and diatoms). Later, in the Pliocene and Pleistocene, the ocean retreated and non-marine fluvial environments abound. These Cenozoic age rocks are typically folded and faulted into a series of generally northwest-southeast trending folds and faulted blocks, largely as a result of predominantly right-lateral strike-slip stresses related to movement along the San Andreas fault system. The inland valleys, including the Carmel Valley, are filled with unconsolidated to semi-consolidated alluvium (stream channel and over-bank deposits) of Quaternary age (about the last 1.6 million years).

Regional geomorphic features within the Carmel and Monterey areas are the result of a complex geologic history of uplift and folding ultimately caused by the interaction between the North American and Pacific tectonic plates. About 760,000 years ago, much of California's Central Valley was a great freshwater inland sea referred to as Corcoran Lake. The ancient lake drained out of the southern end of the Central Valley and flowed to the Pacific Ocean along the antediluvian Salinas River to Monterey Bay (LaJoie, U.S.G.S, personal communication; Martin 1999; Bartow 1991). Monterey Bay and the offshore Monterey Canyon are the result of erosion as large quantities of detrital material was transported from the Sierra Nevada to the Pacific Ocean via the Salinas River. The Salinas River etched into and widened the northwest-southeast trending valleys that were formed by the two tectonic plates grinding past each other.

About 560,000 years ago, continued tectonic uplift and displacement on the San Andreas fault closed the Salinas Valley outlet of Corcoran Lake to the Pacific. This tectonic change permanently shut off Central Valley drainage to the Monterey region. Shutting the southern outlet of the Central Valley caused the waters of Corcoran Lake to rise and eventually to spill over and carve through the soft soils at Carquinez Strait northeast of the Golden Gate. The new outlet filled the basin now referred to as San Francisco Bay. Its headwaters removed, the Salinas River became an underfit river in an overly large ancient fluvial system. Regional geomorphic evidence suggests some of the ancient river flow from Corcoran Lake may have drained through the Carmel Valley depositing the granite gravel and cobble terraces now suspended along the valley margins.

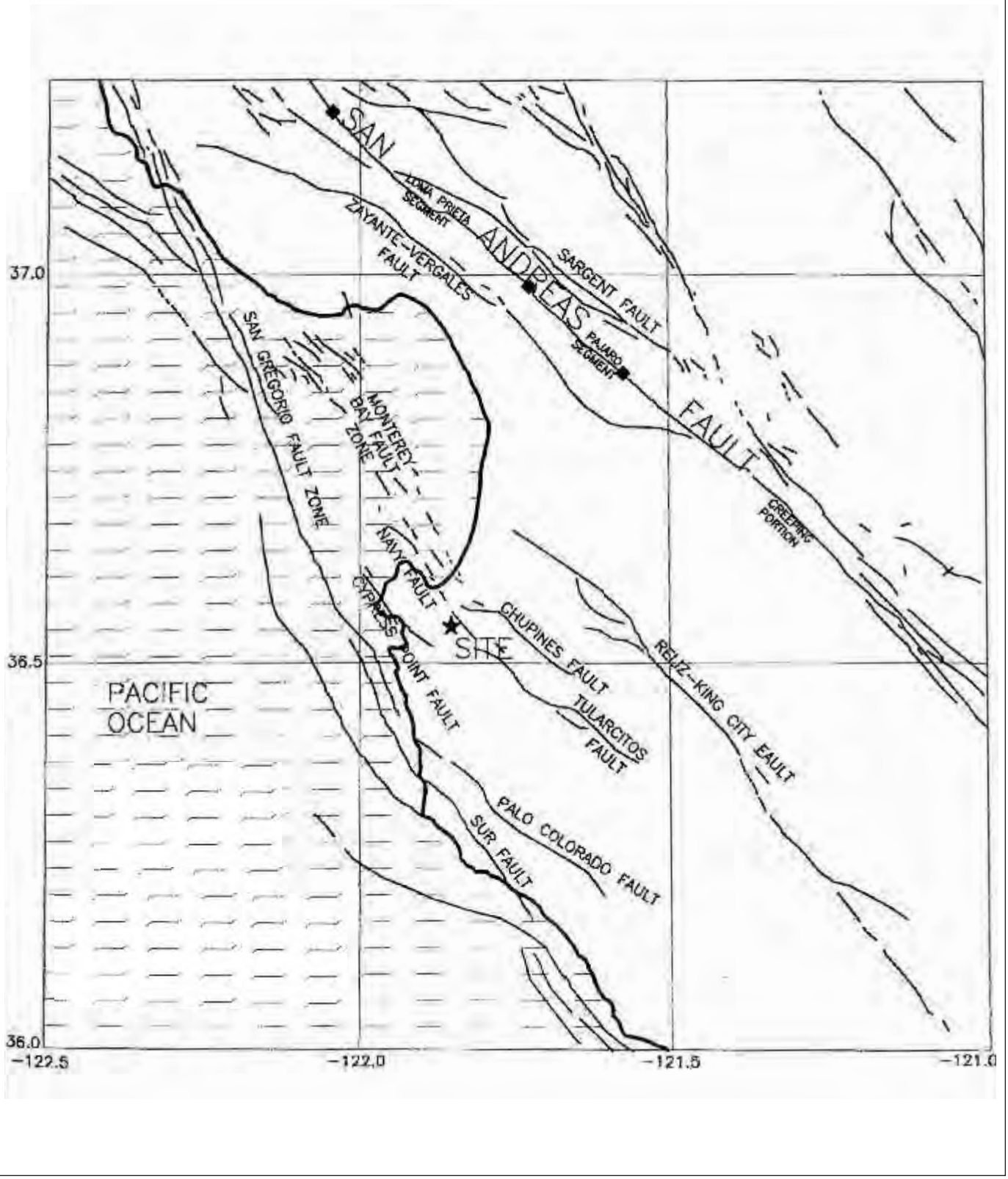
Local Geology

The September Ranch Subdivision project is located within a topographically and geographically complex mountain block. The site consists of north-south trending ridges and canyons, which slope southward toward Carmel Valley, and were modified by land sliding and old river terraces. The ridge tops are rather narrow and flat to moderately sloping. The drainages are generally deeply incised, with very steep canyon walls. The southernmost portion of the property is flat to gently sloping, and is part of the alluvial plain of the Carmel Valley. Elevations at the site range from 70 feet above sea level (asl) in the southwestern portion of the property to 970 feet asl near the northern property line.

The predominate bedrock exposed on the surface of the proposed project area is marine sedimentary rock of the Miocene Monterey Formation (Tm). The Monterey rocks are overlain by an assortment of Quaternary age unconsolidated materials. In the project vicinity these unconsolidated materials include: terrace deposits (Qt and Qt_1), landslide deposits (Qls), and alluvium (Qal). Colluvium probably interfingers with alluvium around the basin margins.

Miocene Monterey Formation: Locally, the Monterey Formation may rest directly on the basement of crystalline rocks at depths below the project site. The Monterey Formation consists of gently folded, well-stratified, friable to moderately strong siliceous shale, siltstone, and local sandstone.

Terrace Deposits (Qt and Qt1): The older terraces (Qt) are Pleistocene age and generally consist of granitic cobbles and sand in places that are well cemented. The terraces are suspended on the project slopes and range in elevation from approximately 110 to 690 feet above mean sea level (msl). The terraces are separated in elevation probably due to successive deposition, erosion, and uplift due to faulting and folding. The younger terraces (Qt_1) extend from the southwestern boundary of September Ranch to the base of the hills approximately 600 feet north of Carmel Valley Road.



Source: Terratech, Inc., 1996.

NORTH

12 6 0 12

SCALE IN MILES

Michael Brandman Associates

Exhibit 4.2-1
Active and Potentially Active Faults

This terrace deposit consists of unconsolidated sand and gravel. The terrace surface lies at an elevation of about 95 to 185 feet.

Landslide Deposits (Qls): Several landslides of varying size are mapped in the September Ranch highlands. These are bedrock landslides within the Monterey Formation. The largest landslides are in the western portion of the property where the geologic structure includes weak shale beds that project obliquely out of the slope. Many of the younger slides are probably early Holocene as indicated by poorly to moderately defined scarps, hummocky topography, and well-developed drainages. A landslide deposit at the south end of the September Ranch terrace is partially indurated and may not be related to the upland slides of September Ranch. There is no obvious source for the landslide from the September Ranch side of the valley. The absence of a headscarp defining the source of the area on September Ranch and the presence of landslide debris on the south side of Carmel Valley suggest that the slide may be remnant of a large slide that crossed the valley before historic time.

Alluvial Deposits (Qal): The recent alluvium is generally poor consolidated boulders, gravel, sand, and silt deposited by the Carmel River. The gravel content is variable and is locally abundant within the channel and lower point bar deposits. The thickness of the younger floodplain alluvium is generally less than 20 feet.

Faulting and Seismicity

The property is located in an area of high seismic activity and several faults on the Monterey Peninsula are considered active (surface displacement has occurred within the last 11,000 years) by the California Department of Mines and Geology. Recent mapping identified a portion of the Hatton Canyon fault traversing the September Ranch Subdivision project site. Additionally, the Navy Fault, Palo Colorado - San Gregorio and the San Andreas fault zones are located approximately 0.6 miles north and east, 7 miles to the northeast and 27 miles to the southwest, respectively.

Hatton Canyon Fault

Past data identified two traces of the Hatton Canyon fault that were identified as traversing the project site. The more northerly trace crosses the hill front with an east-west trend in the southern third of the property. A southern branch is shown crossing the southwestern portion of the parcel and has a more northwest-southeast trend. These two branches merge west of the property. According to original data, both traces of the fault are active. Terratech staff conducted geologic mapping in the vicinity of the two traces, which was inconclusive, thus a series of backhoe test pits and trenches were excavated to further examine the two traces. Terratech concluded that based on their exploration, there was no evidence for the north branch of the Hatton Canyon fault as it was previously mapped; however, when the southern trace was trenched it was identified as a northwest trending normal fault with Quaternary displacement. While there was no indication of Holocene activity, Terratech, Inc. could not rule out the possibility of recent activity; thus, the fault is considered active.

San Andreas Fault

The majority of regional seismic activity is associated with movement of this fault. The segment of the San Andreas fault zone closest to the project site is the Central Creeping segment, which has generally displayed a history of movement involving slow creep. Earthquakes of relatively small

magnitude appear to accompany the creep activity, presumably relieving stress that has accumulated along the fault.

Segments of the San Andreas fault zone north of the Central Creeping segment have the potential for generating earthquakes that range in magnitude from 5.5 to 8.0 on the Richter scale.

Palo Colorado-San Gregorio Fault

The Palo Colorado-San Gregorio offshore fault zone has not exhibited activity like that of the San Andreas fault zone, although the system is extensive enough to produce earthquakes of a magnitude of 8.0 on the Richter scale. This fault zone has generated significant seismic activity just north and west of the project site and has the potential to produce the strongest ground shaking at the project site.

Located between the San Andreas and San Gregorio fault zones are several active or potentially active faults including the King City, Chupines, Berwick Canyon, and Navy faults. The Navy fault is mapped as lying approximately 1,500 feet northeast of the project site. Based upon recorded seismic activity, the Navy fault is considered active; however, since no Holocene surface rupture has been identified, the Navy fault is less likely to produce strong ground shaking at the project site in relation to the San Andreas and Palo Colorado - San Gregorio faults.

Navy Fault

The Navy fault crosses adjacent properties to the north and east of the project site. Mapping indicates that the fault is a northwest striking, steeply southwest dipping, strike-slip fault extending from Carmel Valley northwest to Monterey Bay. The Navy fault is in close alignment to the Tularcitos fault that suggests that these two faults are continuous. To the north, the Navy fault may extend offshore and merge with the Monterey Fault Zone. This zone is located approximately five miles north of the project site and consists of a broad band of numerous short faults beneath Monterey Bay. Trenching studies along the Navy fault have not produced clear evidence of Holocene displacement but a number of small earthquakes recorded in the area have been attributed to the Navy fault.

Slope Stability

Geconsultants and Terratech performed geologic evaluations of potential onsite landslide areas in 1981 and 1996, respectively. According to these reports, there is a low potential for slope stability problems in most of the project area. However, many low slopes could become unstable if future road cuts expose day-lighting bedding planes. Since bedding orientation cannot be projected accurately from existing outcrops, these areas will need to be analyzed at the time of construction.

Twelve of the proposed residential sites (Lots 31-35 and 80-88) are located on or near mapped landslides (the Eastern and Southern Landslides respectively). An additional two residential sites (Lots 99 and 100) are in an area that was previously mapped as the Northern Landslide; however, recent investigations performed by Terratech suggest that the Northern Landslide is more likely differential erosion by the ancestral Roach Canyon.

Southern Landslide

Several published geologic maps illustrate a large landslide complex (the Southern Landslide) on the eastern slopes of Roach Canyon approximately 0.8 miles upstream of the canyon's mouth. As previously identified, this landslide covers portions of lots 80 to 88.

The results of subsurface exploration and field mapping within the Southern Landslide area reveal conditions that are consistent with the ancient debris flow type of landslide. The relatively ancient age of the landslide can be inferred from the subdued, rounded topographic features; the development of drainages within and at the margins of the landslide; the consolidated, almost cemented, nature of the landslide deposit; and the absence of evidence suggesting any recent landslide activity. This landslide probably formed in the late Pleistocene to early Holocene age (approximately 10,000 years ago), in climatic conditions which were more wet than today. The entire landslide area is covered with forest and brush, with no bare or sparsely vegetated ground indicative of active landsliding.

A smaller slide was located utilizing aerial photo interpretation adjacent to and northeast of the larger southern landslide. The smaller slide includes parts of Lots 85 and 86. A limited amount of reconnaissance mapping was performed in the headward portions of this feature, but dense vegetation and steep terrain prevented any subsurface exploration at the time. The distinguishable characteristics of this slide include a steep headscarp area, a small ravine between the headscarp and what may be a downdropped block of Monterey Formation rock, and a lobate toe area. No evidence of recent slide activity was observed by Terratech.

Eastern Landslide

A large, oblong flat area measuring roughly 500 feet by 300 feet is located on the western slope of the eastern ridge of September Ranch. The flat area lies about one quarter of the way down the slope and is large enough to accommodate the building envelopes for Lots 31 to 35. The slope below the flat area is smooth and planar, revealing no signs of landsliding. Several additional flattened areas can be observed near this general elevation on either side and at the nose of the ridge. The flat area itself and most of the slopes above and below are covered by oak woodland and bush. The lack of outcrops necessitated subsurface exploration of this feature.

Based upon observations of test borings, pits and trenches, Terratech concluded that the geometry of the eastern landslide is of an ancient block glide landslide that moved northward. The toe portion of the landslide remains relatively intact, and slip has produced toppling. The head portion of the landslide filled after displacement and produced the flat surface presently seen. Based on the degree of infilling of the head area, the induration of materials infilling the head area, the denudation of the headscarp, and the position of the toe well above the present drainage Terratech concluded the eastern landslide has not moved for thousands, perhaps tens of thousands, of years.

Northern Landslide

An area of anomalous topography exists in the northwest corner of proposed project and the adjoining portion of Jacks Peak County Park. Terratech's previous investigations in this area (1995) focused on a small landslide mapped by Geoconsultants (1995) which shows a low swale at the boundary between Lots 99 and 100. During that investigation, eight test pits were excavated. Both the geomorphic expression of this swale area and the materials encountered in the subsurface are

distinctly different from those identified in other known landslides in the project area. The results of Terratech's aerial photo interpretation and backhoe test pit exploration in the vicinity of the northern landslide mapped by Geoconsultants (1995), suggest that this feature is more likely an alluvial/colluvial deposit.

It is Terratech's professional opinion that evidence accumulated to date supports their interpretation that the prominent pattern of arcuate ridges and valleys—interpreted by others as landsliding—is more likely a result of differential erosion by the ancestral Roach Canyon. According to Terratech, this interpretation is supported by the following:

- Similar arcuate terrain clearly not related to landsliding can be observed in other parts of the region;
- The general conformance of bedding attitudes observed in cores from borings, in test pits, and in trenches with those measures in outcrop rock in the vicinity;
- The presence of alluvial deposits in the "hanging" valley suggested stream activity in the geologic past; and
- The lack of landslide breccia in exploratory boreholes.

Although sufficient evidence exists to rule out the major northern landslide mapped by others, some landsliding can reasonably be interpreted on the lower slopes. Aerial photographs show this area has a steep scarp slope at the top, a flattened head region, irregular ground surface, and lobate toe. This may be a shallow debris flow landslide. Terratech has not done any subsurface exploration on the northern landslide, but the steepened bedding dips and fracturing exposed by test pits excavated on the ridge above support this interpretation.

Debris and Soil Creep

Under certain conditions, steep terrain underlain by Monterey shale is susceptible to debris flows, which are the rapid downslope movement of saturated soil. Debris flow frequently travels as fast as 40 to 50 feet per second and usually occurs during or shortly after intense rainfall, particularly when a previous rainfall has already deeply infiltrated the slope materials. Debris flows occur most frequently in hillside swales that have a surficial cover of relatively permeable, residual or colluvial deposits overlying denser, less permeable soil or bedrock.

Local soil creep may be occurring within topsoil and colluvial deposits on moderate to steep slopes inclined greater than 3:1 (horizontal to vertical).

Erosion and Sedimentation

Erosion is not evident in areas presently covered with vegetation, but a limited amount is obvious on several portions of dirt roads and road cuts. Alluvial fans and alluvial-filled valleys are the only areas within the project site that are presently undergoing sedimentation

Groundwater

Permanent groundwater is most likely at a considerable depth beneath the upland portions of the project area. Several test pits and trenches encountered groundwater seeps originating at the

soil/bedrock contact; however, the excavations were conducted in the spring and probably reflect ephemeral flow in a perched water table. All drill holes had some water loss problems during excavation, which indicates a relatively low water level and a high permeability in the uppermost earth materials.

Expansive Soil

Most of the hillside portion of the project site is covered with a thin veneer of topsoil and colluvial comprised of a light brown to black sandy to silty clay and silt. These soils, derived from the weathering of the Monterey Formation, are generally moderately to highly plastic, but low to moderate in expansion potential. No highly expansive soil was encountered during test excavation nor was it observed during field reconnaissance mapping. However, soils developed as a result of weathering of Monterey shale can be highly expansive.

4.2.2 Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant impact upon geology and soils if:

- There is evidence of geologic hazards, such as landsliding or excessively steep slopes, that could result in exposure to hazards or slope failure due to improper grading or design;
- It would expose people or structures to major geologic hazards; or
- The subsurface soil conditions are subject to liquefaction or other secondary seismic hazards in the event of groundshaking.

Potentially Significant (Geological Impact 1) - Surface Rupture and Seismic Shaking: Surface rupture tends to occur along lines of prior faulting. As discussed previously, a probable active trace of the Hatton Canyon fault traverses the southwest portion of the site. Subsurface investigations along this fault did not encounter any evidence of recent surface displacement or movement along the fault. However, other data indicates that some of the recorded seismic activity in the area may be the result of movement along the subsurface extension of the fault. Lots 65, 66, and 68, as well as the equestrian center, are situated in the vicinity of the probable fault trace.

The project site will be subject to seismic hazards as a result of earthquakes on distant faults (San Andreas, San Gregorio) and possibly the onsite Hatton Canyon fault or other nearby potentially active faults. Moderate to severe groundshaking and associated seismic hazards due to large earthquakes on one or more of these faults may be experienced during the lifetime of the project. Additionally, its general alignment with nearby potentially active faults suggests these faults or fault zones may be different expressions of the same feature. Table 4.2-1 identifies the estimated ground responses at the site for a maximum credible event (MCE).

Table 4.2-1: Predicted Mean Ground Accelerations from Maximum Credible Events

Fault	Distance (miles)	Magnitude (MCE)
Hatton Canyon fault	0.0	6.0
Navy fault	0.6	6.7
Monterey Fault Zone	4.5	6.7
Palo Colorado - San Gregorio	7.0	7.5
San Andreas	27.0	8.3
Source: Terratech, Inc., May 1996.		

Mitigation Measures

4.2-1: The proposed project shall have a 50-foot setback for residential dwellings on either side of the southern mapped trace of the Hatton Canyon fault.

4.2-2: Underground utilities, which cross the fault trace shall be fitted with flexible couplings and shut off valves.

4.2-3: Prior to the construction of lots 65, 66, and 68, and any additional construction on the equestrian center, the project engineering geologist shall confirm that no fault traces cross the proposed building sites.

4.2-4: Proposed structures shall incorporate design in accordance with the latest Uniform Building Code and the appropriate seismic design criteria. A geotechnical investigation shall be prepared for each proposed building site to characterize soil and bedrock conditions so that suitable seismic foundation designs can be provided. The geologic investigation shall employ standard engineering practices to ensure adequate foundations and design standards for the building sites.

Implementation of the mitigation measures will reduce surface rupture and seismic shaking impacts to less than significant levels.

Monitoring Actions

Prior to the issuance of grading permits, the geologic investigation shall be submitted to the Director of Planning, Monterey County Planning and Building Inspection Department for review and approval.

Prior to the issuance of building permits, the applicant shall submit to the Director of Planning, Monterey County Planning and Building Inspection Department, written evidence that all site work will be inspected and tested during performance by a qualified engineering geologist.

Potentially Significant (Geological Impact 2) - Slope Stability, Debris Flow, and Soil Creep: Terratech performed slope stability analysis in an effort to provide quantitative insight into the stability of the Southern and Eastern landslides. These landslides appear to be stable and are not anticipated to impact the proposed residential lots, provided that they are not significantly altered by grading during construction and provided that water infiltration, such as diverted stormwater runoff,

is not introduced into the landslide mass. The proposed project-related sewer system is designed to preclude the potential saturation and increased instability potential of landslide deposits. It is anticipated that the construction of roadways, residential lots, and associated drainage systems will act to divert surface waters and reduce the amount of water infiltration into the slide. On this basis, a properly designed development may increase the stability of the landslides.

Should a major earthquake occur close to project area, ground shaking at the site will be severe; yet even under the influence of severe ground shaking, the clayey soils and bedrock that underlie the area proposed for development are unlikely to liquefy. However, severe ground shaking could induce localized landsliding and slope failure at the site.

Structures located in the torrent track or in the depositional area of a debris flow can be damaged or destroyed by the impact of moving material. Building envelopes that are sited below slopes that have surficial cover of relatively permeable, residual, or colluvial deposits overlying denser, less permeable soil or bedrock may be subject to debris flows.

Mitigation Measures

4.2-5: Earthwork and grading shall be kept to a minimum within the landslide deposits; any work performed within these areas shall be performed under the supervision of a qualified engineering geologist.

4.2-6: Cut slopes in competent bedrock shall be constructed at slope inclinations no steeper than 0.5:1 to heights up to 15 feet, and should be approved by the project engineering geologist before grading.

4.2-7: Proposed cut slopes steeper than 0.5:1 or exceeding a height of about 15 feet may be allowed upon the approval by the project engineering geologist or geotechnical engineer.

4.2-8: Cut slopes within severely weathered rock that is susceptible to bedrock creep, or in areas of adverse bedding dip shall employ flatter slopes, typically 2:1 or less.

4.2-9: Structures located within old landslide deposits shall be constructed at or very near the natural grade to reduce cut slopes. Limited cut slopes can be created for access roadways and shall be constructed on slopes no greater than 2:1 and shall not exceed heights of 15 feet. Cut slopes shall be approved by the project engineering geologist or a geotechnical engineer before grading.

4.2-10: Cut slopes in colluvium, alluvium, or topsoil shall be constructed at a slope inclination not steeper than 2:1. All cut slopes shall be provided with permanent protection against erosion.

4.2-11: Compacted fill slopes shall be constructed at a slope inclination not steeper than 2:1. All fill slopes shall be provided with permanent protection again erosion.

4.2-12: Control cut and fill earthwork that may destabilize the land surface; vegetation removal; and control surface water infiltration.

4.2-13: Residential lots located upslope of or adjacent to old landslide deposits shall have drainage systems that divert concentrated surface waters from the slide masses.

4.2-14: Landscape irrigation systems shall be kept to a minimum (Monterey County standards) on lots shown in landslide deposits. Construction on ancient landslide deposits shall be appropriately designed to result in overall improvement to the existing drainage conditions within the landslide areas. Unlined ponds on or adjacent to the slide mass shall be avoided.

4.2-15: Subsequent design-level geotechnical investigations shall be preformed at the appropriate time following preparation of definitive grading plans and during design of specific structures. In addition, subsequent geologic investigations shall be performed before construction on Lots 65, 66, and 68. Subsequent subsurface exploration shall be conducted before the final map approval to further characterize the possible mapped landslide in the vicinity of Lots 85 and 86.

Implementation of the mitigation measures will reduce slope stability, debris flow, and soil creep impacts to less than significant levels.

Monitoring Actions

Prior to the issuance of grading permits, the applicant shall submit to the Director of Planning, Monterey County Planning and Building Inspection Department for review and approval the grading plan, which has been certified and approved by a qualified engineering geologist.

Prior to the issuance of building permits, the applicant shall submit to the Director of Planning, Building and Inspection Department written evidence that all site work shall be inspected and tested during performance by a qualified engineering geologist.

Potentially Significant (Geological Impact 3) - Erosion, Sedimentation, and Groundwater: Erosion will most likely occur along fill slopes and along cut slopes. These surfaces will require protection in order to keep erosion and subsequent sedimentation at acceptable levels; however, roads are the only improvements anticipated to be impacted by sedimentation.

Groundwater at the project site is confined to alluvial materials and, therefore, has a low potential to affect the majority of the development. Possible exceptions are the valley fill of Roach Canyon and Carmel Valley, where shallow groundwater was encountered. There are indications that during prolonged rainfall, water levels could rise close to the current ground surface.

Mitigation Measures

4.2-16: The effects of erosion and sedimentation may be mitigated by vegetative cover and properly designed surface drainage features. Competent bedrock exposed in both natural slopes and cut slopes will be less susceptible to erosion and, therefore, may not need a protective slope cover. Many of these slopes tend to be covered by rocky rubble, which works its way down slope over many years. Proper surface drainage systems shall be designed to direct concentrated water runoff away from the tops of these slopes.

4.2-17: Shallow ground water conditions shall be considered in the design of roadways, utilities, and structures in these areas.

4.2-18: Drainage control shall include provisions for positive gradients so that surface runoff is not permitted to pond, either above slopes or adjacent to building foundations. Surface runoff and runoff from roof gutters shall be collected in lined ditches, closed pipes, or drainage swales and shall be conducted adequately to a storm drain, paved roadway, or water course.

Implementation of the above mitigation measures will reduce erosion, sedimentation, and groundwater impacts to less than significant levels.

Monitoring Action

Prior to the issuance of grading or building permits, the applicant shall submit to the Director of Planning, Monterey County Planning and Building Inspection Department for review and approval the drainage plan, which has been certified and approved by a registered civil engineer or architect.

No Impact - Expansive Soils: The soils that develop as a result of the weathering of Monterey Shale may be highly expansive. Expansive soils could impact building foundations and/or road pavement. However, most of the proposed development is located along drainage divides where these soils are generally thinnest; due to their shallow extent, the expansive soils should not impact the proposed development provided the materials are cleared from the building areas prior to foundation construction.

Consistency with Relevant Plans and Policies

The following Carmel Valley Master Plan (CVMP) policies apply to the implementation of the proposed project:

CVMP Policy 3.1.1.1: A soils report in accordance with the Monterey County Grading and Erosion Control ordinances shall be required for all changes in land use which require discretionary approval in high or extreme erosion hazard areas as designated by the Soil Conservation Service manual "Soil Surveys of Monterey County." This report shall include a discussion of existing or possible future deposition of upslope materials or downslope slippage for each site.

CVMP Policy 3.1.1.2: As part of the building permit process, the erosion control plan shall include these elements:

- Provision for keeping all sediment on-site;
- Provision for slow release of runoff water so that runoff rates after development do not exceed rates prevailing before development;
- Revegetation measures that provide both temporary and permanent cover;
- Map(s) showing drainage for the site, including that coming onto and flowing off the property; and

- Storm drainage facilities shall be designed to accommodate runoff from 10-year or 100-year storms as recommended by the Monterey County Flood Control and Water Conservation District.

CVMP Policy 3.1.1.3: All exposed areas within development projects subject to erosion and not involved in the construction operation shall be protected by mulching or other means during the rainy season (October 15 - April 15).

CVMP Policy 3.1.1.7: The combination of generally steep slopes and often thin and erosive soils present a definite potential for erosion and siltation, which may have an adverse effect both on and off-site. Development shall therefore be carefully located and designed with this hazard in mind.

CVMP Policy 3.1.1.9: A condition of approval requiring on-going maintenance of erosion control measures identified in the erosion control plan shall be attached to all permits allowing development in areas prone to slope failure, including but not limited to the following:

- All development in areas classified as highly susceptible to slope failure;
- All development on sites with slopes greater than twenty percent; and
- Where roadways are cut across slopes greater than thirty percent, or across slopes with thin and highly erosive soils.

CVMP Policy 15.1.16: Areas identified as being subject to landsliding, faulting, or other geologic hazards shall receive competent review by professionals acceptable to the County Planning Department at the time any changes in use are proposed. The findings of such review shall be used in determining possible development constraints and in defining appropriate mitigation measures.

CVMP Policy 15.1.17: Areas classified as highly susceptible to slope failure (including categories 5 and 6 of the soil stability classification) should be designated as open space in proposed development plans unless detailed geologic investigations made by professionals acceptable to the Planning Department determine that development may be designed and constructed in a manner to reduce the risk of slope failure or associated hazards and such risk reduction is to a level acceptable to the Board of Supervisors.

Consistency Analysis: The proposed project is consistent with the goals and policies of the CVMP that pertain to geology and seismicity. Potential constraints to development within the project area were taken into consideration during the preparation of the General Plan, thus the land use designations for the project area (as outlined in the Master Plan) are based in part on the determination that residential uses are appropriate in relation to geological concerns. Several geologic investigations have been undertaken in association with the proposed project including, the Geologic and Geotechnical Feasibility Investigation (Terratech, Inc. 1996), Geologic Evaluation of Mapped Landslides (Terratech 1996), Technical Peer Review by Nolan Associates (June 1996), Preliminary Geological Feasibility Study (Geoconsultants 1995), the Geologic Evaluation of Two Landslide Areas (Geoconsultants 1981), and the Geologic, Soils, and Drainage Assessment (Kleinfelder, Inc. 2003). Moreover, in accordance with the Monterey County Grading and Erosion Control ordinances, the project applicant will prepare a soils report and erosion control plan to address issues related to extreme erosion and siltation and their effects on and off the project site. Consistent with the CVMP, these plans will be reviewed and subject to approval by the County.

4.3 Water Supply and Availability

This section of the EIR considers the availability of a water supply for the September Ranch Project along with the impact of using that water supply on other water rights holders and on the environment.

To better understand the hydrologic issues, Kennedy/Jenks Consultants (KJC) prepared a hydrogeologic report for the proposed project in December 2004. The purpose of the hydrological report was to assess the existence of a long-term water supply for the project, to prepare a water balance for the project, to determine where September Ranch's water rights fit in the hierarchy of water rights, and to determine the effect of diversions for September Ranch on nearby water supplies. KJC reviewed the Final EIR prepared by Denise Duffy & Associates and related documents and supplemented the findings in these documents as necessary to provide sufficient and substantial evidence in the determination of sustainable yield to supply the project demand.

The following is a synopsis of the conclusions reached by KJC as further explained in this section and included in their entirety in Appendix C of this Draft REIR.

KJC uses an amount of three (3) acre-feet per year as the appropriate baseline for pre-existing project conditions. This amount was determined by the County as the relevant condition prior to and at the time of the 1995 project application. The amount is based on water usage for a single residence (0.5 AFY) and the amount of water applied for 50 horses (45 gallons per horse per day for a total of 2.5 AFY). The selected baseline appears to be reasonable and representative of aggregate average water usage of undeveloped nonresidential land-use in the Camel Valley. However, it is acknowledged within this section, that the current usage at the project site is 99 AFY.

Based upon these conclusions and the project's water demand of 57.21 AFY, as discussed in detail in Section 4.3.4, KJC concludes that the September Ranch Aquifer (SRA), which underlies the project site, contains an adequate and reliable water supply for the proposed project. This conclusion is based upon a historical record of variable rainfall and on a detailed understanding of the groundwater resources in the SRA. Even in the driest years on record, sufficient rainfall and recharge occurred as to ensure sufficient water is stored within the SRA to meet the project. KJC also concludes that the project will have a less than significant effect on the adjacent Carmel Valley Aquifer (CVA) in relation to the significant water resources within the CVA. KJC calculates the demand based upon a collection of water pumping and water rights data from a number of locations and concludes that the exercise of water rights by September Ranch will have no effect on those water rights that are more senior to, or of the same priority as, September Ranch. KJC also examined the connection between the SRA and the CVA and concluded there is very limited hydrologic connectivity and that exchange of groundwater occurs under existing conditions and under proposed project conditions when rainfall within the September Ranch basin available for recharge exceeds the storage capacity of the SRA is "rejected" (because of lack of storage space) and is thus, stored within the CVA.

4.3.1 Overview of California Water Rights

Due to the complexities associated with groundwater hydrology and the bifurcated nature of water rights in California, this section provides an overview of water rights in California and explains how the water rights system provides interplay with the hydrology present in and around the proposed project.

California administers its water rights under a bifurcated system that generally separates water rights associated with surface water (such as the water in streams, rivers, and lakes) from the water rights associated with groundwater (water found in its natural state below the surface of the ground). These two systems of water rights operate almost completely separately and demands on one system are generally not considered in determining whether adequate water supplies are available under the other system. One exception to the separation described above exists when the groundwater is deemed to be underflow of a surface water system. Under this exception, because the groundwater is in close hydrologic connectivity with the surface water, and withdrawals of the underflowing groundwater have a direct impact on the availability of the surface water for diversion, the underflowing groundwater is deemed to be surface water subject to surface water rights.

In 1995 the State Water Resources Control Board (SWRCB), in evaluating the water rights of the California-American Water Company (Cal-Am) in the Carmel Valley, concluded that the groundwater in the Carmel Valley Aquifer (CVA) below and surrounding the Carmel River was not properly classified as groundwater, but rather was classified as underflow of the Carmel River and, thus, subject to the surface water rights system (SWRCB Order No. WR 95-10, [July 6, 1995]). Therefore, any diversions of water from the CVA would need to be made pursuant to a surface water right.

While exceptions exist, the two primary types of surface water rights in California are the riparian right and the appropriative right. The riparian right is a right that exists by nature of a parcel sitting adjacent to a water course. Because of the proximity of the parcel to the water course, the law imputes to the parcel a right to divert water to the parcel. All owners of riparian parcels may divert the water necessary for use on their parcel, so long as the use is reasonable and beneficial. The right, however, is said to be "correlative" with all other riparian rights. This means that in a time of shortage, all riparian parcels must reduce their use of water on a *pro rata* basis. A parcel will generally lose its riparian status if the parcel becomes separated from the water course. Under this limitation, if a parcel is riparian and is subdivided into two parcels (one still being adjacent to the water course and the other now being separated from the water course by the other parcel), then unless explicitly stated otherwise in the documents affecting the subdivision, the parcel no longer adjacent to the water course will generally lose its riparian status.

The second primary type of surface water right in California is the appropriative right. The appropriative right is a right that does not rely on the proximity of the land to the water course. Prior to 1914, an appropriative right was established by the diversion of water for beneficial use on a parcel of land. Such diversion and use needed to be publicly manifested (either through open and notorious use or through the filing or posting of the right). Beginning in 1914, one could only establish an appropriative right by filing an application with the State and being granted a permit (and eventually a license) for the appropriative right. In contrast to the correlative nature of the riparian right, the appropriative right is based on a priority system. That is, in times of shortage, water must be allocated to the most senior holder of an appropriative right before being made available to holders of junior appropriative rights. For appropriative rights, the seniority or priority is determined by the date on which water was first put to beneficial use. Thus, for example, in a year of shortage, water would be available for a right established in 1920 before it would be available for a right established in 1921.

The interplay of riparian and appropriative rights in time of shortage is complex. In simplest form, in order to determine the appropriate allocation of water in times of shortage, a priority date must be

applied to each riparian parcel, so that the riparian rights may be fit into the priority system. The date that is used for this is the date that the parcel was first patented from the United States. Thus, due to the fact that most lands in California were patented in the 1800s or early 1900s, riparian rights tend to be fairly senior rights.

Just as surface water rights exist as a bifurcated system (riparian versus appropriative), groundwater rights (commonly called rights to percolating groundwater to distinguish them from rights to underflow – which is also groundwater) also exist as a bifurcated system of rights. The first percolating groundwater right is the overlying right. An overlying right is akin to a riparian right in that it exists by nature of the parcel of land overlying an aquifer of percolating groundwater. The overlying right is a right to withdraw percolating groundwater from the aquifer in an amount that may be used in a reasonable and beneficial manner on the overlying parcel. As with riparian rights, the overlying right is a correlative right, meaning that all overlying parcel owners must cut back on their usage in time of shortage.

The second percolating groundwater right is the appropriative right (not to be confused with a surface water appropriative right). An appropriative right to percolating groundwater exists where one withdraws percolating groundwater for use on a parcel that does not sit over the aquifer from which the water is withdrawn (this right also exists where the water is withdrawn by municipalities in certain circumstances not relevant here). Percolating groundwater is only available for an appropriative right when there is more water in the aquifer than is needed to satisfy the needs of the overlying users. In other words, an appropriative right to percolating groundwater only exists when there is percolating groundwater that is surplus to the needs of the overlying parcels.

The SWRCB does not have jurisdiction over percolating groundwater. Thus, all issues of percolating groundwater must be resolved in a court of law. There is also no system of registration for water rights associated with percolating groundwater.

4.3.2 Conclusions Regarding Water Rights of September Ranch

The administrative record that went before the Monterey County Board of Supervisors for the approval of the project contained the following key conclusions that affected issues of water rights:

- The sub-basin underlying 21 acres of the September Ranch property was not entirely separate from the CVA and there was water exchange between the sub-basin and the CVA.
- Because the groundwater in the CVA is underflow of the Carmel River and the sub-basin is connected to the CVA, a surface water right is required to withdraw water from the sub-basin.
- The September Ranch property holds a riparian right to the waters in the CVA and the sub-basin.

In response to these conclusions, the Court of Appeal questioned whether there was adequate evidence in the administrative record to support a riparian right and then raised eight questions associated with those riparian rights:

> The Supplemental EIR presented new and significant information regarding the applicants' asserted riparian right, which raised important water issue questions. If the validity of such a right were determined, would this entitle the applicant to rights superior to those of appropriative water users? How would these rights be superior?

> How would this affect other riparian water users in the area during times of drought? If the exercise of a riparian right would not require a permit, but would be subject only to a rule of "reasonable use," how is water use regulated and controlled? Can a riparian right underlying one portion of the property be the basis for a private mutual water company providing water to the entire subdivision? Does the exercise of such a right create a precedent for other subdivisions and thus result in growth-inducing impact? Is the exercise of a riparian right, which may justify an expanded use of water, consistent with local policies limiting water for new development? Were further mitigation measures warranted?

In response to these questions, the County undertook two examinations. First, as described above, KJC was retained to analyze the hydrologic issues associated with the water diversions, including developing a more complete understanding of the inter-relationship between the sub-basin and the CVA. Second, the law firm of Downey Brand LLP (Sacramento, California) was retained to determine whether the September Ranch property was riparian to the underflow of the CVA, and the relative priority of the water rights held by the September Ranch property.

As previously discussed, the conclusion reached by KJC is that there is relatively little exchange of water between the SRA and the CVA. Based on the groundwater gradient, the exchange that may occur is dominantly in the direction from the SRA to the CVA. With this information in mind, pumping in the SRA is unlikely to affect the CVA. This is important because of the numerous water rights held by other pumpers to the waters of the CVA. This section of the EIR provides the reasoning associated with that conclusion.

However, due to a competing (though less persuasive) body of evidence that the SRA and the CVA are sufficiently hydrologically connected for them to be considered a common basin (for example, a letter from the SWRCB stating that "the alluvium underlying the September Ranch is part of the Carmel River subterranean Stream") this EIR also includes analysis of whether diversions by September Ranch from the CVA will affect others holding senior water rights to the CVA. This analysis makes relevant the conclusion reached by Downey Brand LLP that the September Ranch property is riparian to the CVA.

In the fall of 2002, the County retained Downey Brand LLP to perform an independent review of the water rights of September Ranch and to determine what water rights (if any) were associated with that parcel of land. Downey Brand LLP's review was based on a chain of title of deeds and other conveyance documents for the September Ranch parcel (gathered by an independent researcher) that went back to the original patenting of the parcel. After reviewing the complete chain of title in January of 2003 Downey Brand LLP concluded that the September Ranch parcel is riparian to the Carmel River.

However, due to an agreement that is part of the chain of title (between the predecessors-in-interest of September Ranch Partners and Cal-Am) the riparian right held by September Ranch has been subordinated to the pre-1914 rights held by Cal-Am. In order to effectuate this subordination, Downey Brand LLP assigned a priority date to September Ranch which was more junior than the priority date of Cal-Am's pre-1914 rights. For purposes of analyzing the relative priority of the water rights, Downey Brand LLP assumed that September Ranch's riparian right was also subordinated to other riparian parcels. While this assumption may not be supported by an actual review of the chain of title for other riparian properties, it was appropriate because it made Downey Brand LLP's

conclusions more conservative. In other words, the use of the assumption decreased the margin of error associated with determining whether September Ranch's exercise of its riparian right would harm any other senior water rights holder.

Thus, based upon the findings of Downey Brand, KJC's analysis focused on collecting and evaluating the appropriate information to:

- Identify the water rights held by the September Ranch Partners for the property;
- Identify the quantities associated with relevant superior water rights to those of September Ranch; and
- Determine whether pumping in the SRA might negatively affect the superior water rights.

Analysis of Information at Relevant Water Rights

The Water Rights Information Management System (WRIMS) database managed by the State Water Resource Control Board was used to collected data for the water rights analysis. Use of the database required substantial preprocessing of data and holder of rights locations. The method used was as follows:

- The rich text format (RTF) file provided was manually entered into a spreadsheet database because there was no expedient means of converting the file and SWRCB could not provide an electronic file that could be easily converted into a spreadsheet or database format. Duplicate records were eliminated.
- The data that were classified as of type "STATE" were assembled, since they represent those records that could include riparian water rights and pre-1914 rights. All of the other data types were for post-1914 appropriative rights that are therefore subordinate to September Ranch.
- A map that shows the Carmel River Watershed with the township, range, and section delineations consistent with the U.S. Geological Survey topographic mapping was prepared (see Exhibit 4.3-1). It was determined that those water rights found in Aquifer subunits 1 and 2 (AQ 1 and AQ 2) were not considered further for the analysis because the water balance analysis accounts for water rights by only examining that flow of water that exists after diversions in AQ 1 and AQ 2, since the project site is downstream from these subunits. The water balance will be the basis for determining the potential effects of pumping in the SRA on the CVA as discussed in further detail under 4.3.4, Project Impacts.
- The records in the WRIMS database that remained after removing all record types except for those identified as STATE and removing all record types associated with the point of diversion locations upstream of the project site in AQ 1 and AQ 2, are those potential riparian and appropriative water rights in Aquifer subunits 3 and 4 (AQ 3 and AQ 4), which are relevant for consideration to evaluate the potential effects of pumping in the SRA.

Water Rights Decision 1632 Tables 5, 12, and 13 and WRD 95-10

Since the remaining data in the WRIMS database does not distinguish between riparian and appropriative water rights, Tables 5, 12, and 13 from Water Rights Decision 1632, were reviewed because they contain some limited information on those entities that filed water rights claims and the basis (riparian, pre and post 1914 appropriative, and groundwater) for the claim. Water Rights

Decision 1632 - Table 15 is entitled Prior Right Protests, Table 12 is entitled Protests Based Upon Riparian Claims and Table 13 is entitled Carmel River Watershed – SWRCB Determination of Priority and Quantities Obtained from Stipulations, Applications, or Protests (AFA).

Based on the information contained in those tables, the remaining data in the WRIMS database were reviewed to remove those entries that were based on an application number (i.e., post-1914 appropriative). Any record from Table 12 that was based on a tributary to the Carmel River was also removed since it is assumed that most of the tributaries are in AQ 1 and AQ 2. Table 12 does not provide any information on the location of the water diversion. Cal-Am's pre-1914 appropriative rights are set at 1,137 AFA; however, it should be noted that according to Water Rights Decisions 95-10 allows Cal-Am to divert a maximum of 14,106 AFA from the Carmel River "until unlawful diversions from the Carmel River are ended." The analysis in this section relies upon the results of Carmel Valley Simulation model (CVSIM) provided by MPWMD, which accounts for all Cal-Am diversions from the Carmel River, not just those exercising the pre-1914 appropriative rights.

MPWMD Pumping Reports

MPWMD pumping reports for 2002 were reviewed and as previously discussed, pumping in AQ1 and AQ2 were not considered. Those records that remained for AQ3 and AQ4 were compared to the information in the WRIMS database that remained after applying filters. For those entities that remained, the actual 2002 production values were compared with claims made as part of Statements of Diversion submitted to the SWRCB and entered into the WRIMS database. In most cases, the estimated diversions made in the Statements of Diversions were much higher than those reported as actual usage to MPWMD.

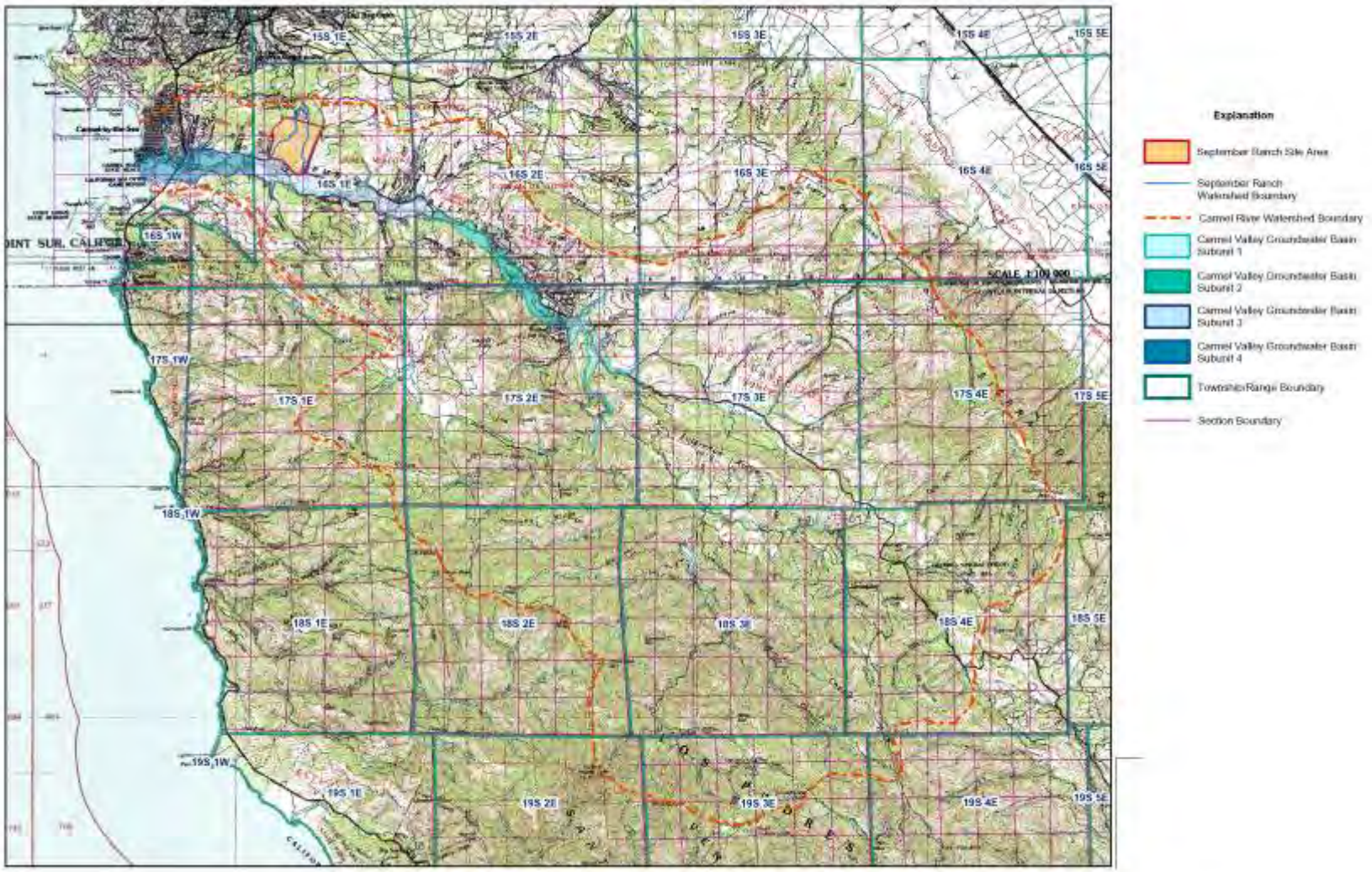
Then, those entities in AQ3 and AQ4 that reported pumping to MPWMD but did not report the pumping to the SWRCB were assumed to be riparian users. The actual pumping in 2002 for each of these riparian users was summed to provide a point of reference for the quantities. The information is summarized in Table 4.3-1 below.

Table 4.3-1: MPWMD 2002 Pumping Data in AQ3 and AQ4

Aquifer Subunit	Total Pumped and Reported to MPWMD (AFA)(excludes Cal-Am)	Total Reported as STATE to SWRCB (AFA)	Total Not Reported to SWRCB (AFA)
3	1,161	513	648
4	786	570	216
Source: Kennedy/Jenks Consultants, December 2004.			

Relevant Water Rights

Table 8 of Appendix C of this REIR, summarizes those water rights that remained after applying the appropriate filters to remove irrelevant records. Under the theory of the data analysis model used for this report, those records that remain represent riparian rights holders and pre-1914 appropriative Cal-Am rights of 1,136 AFA.



Source: Kennedy/Jenks Consultants, November 2004.

NORTH

22641 11320.5 0 22641

SCALE IN FEET

Exhibit 4.3-1
Carmel River Watershed

Michael Brandman Associates

The data from the different sources were reviewed and an estimate made up of the maximum annual use that these water rights holders may represent. Where available, the information from Table 13 of WRD 1632 was used, otherwise, the Maximum Annual Use in the WRIMS database was used. In the case where neither of these information sources was available, the maximum direct diversion rate was applied for 365 days per year to estimate a total maximum use.

The 2002 estimated pumping in AQ3 and AQ4 from MPWMD were each increased by 20 percent to represent the inherent variability in pumping as well as under-pumping and unreported pumping by riparian users. It is estimated that 20 percent is appropriate because of the limited potential for additional large development, and hence additional large water demands, in the area of influence of the Carmel River. In addition, in most cases, actual pumping is much lower than the water rights claims that have been documented with the SWRCB.

Some of the WRIMS records that remain are for APPLC, which appears to indicate that even though the entity has a riparian right they have chosen to file for an appropriative right as well, or based on other information, that the entity is a riparian rights holder.

Based on this evaluation, there appears to be a maximum annual use of up to 4,550 AFA for riparian rights and pre-1914 appropriative rights holders in AQ3 and AQ4. Although there is not sufficient information to better allocate these water rights holders to AQ3 and AQ4, an estimate based on pumping reported to MPWMD is that 60 percent of the pumping may occur in AQ3 and 40 percent in AQ4. At these ratios, AQ3 may represent about 2,705 AFA and AQ4 may represent about 1,845 AFA of water use by riparian and pre-1914 appropriators.

This maximum annual use number is conservative in that it assumes that the maximum use cited by an entity is pumped. Based on the MPWMD pumping data, actual water use appears to be significantly lower than that which an entity cites.

This evaluation does not include the following:

- Estimates of future demands for riparian water based on changes/maturing of land uses because such estimates would be extremely speculative.
- Conclusive identification of all pre-1914 appropriative rights holders. It appears likely that all of the significant pre-1914 water rights have been identified through the methodology used by KJC. In addition, the conservative factors built into the methodology should cover other unidentified pre-1914 right holds.
- Confirmation of points of diversion in WRIMS database for accuracy and cross-referencing with assessors parcel numbers or other information that could improve the accuracy of locating water rights users. Once again, however, the conservative factors built into the methodology should cover any errors in this area.

Conclusions of Water Rights Evaluation

As may be expected, there is considerable water use in AQ3 and AQ4 that may fall into the category of riparian or pre-1914 water rights holders. In order to evaluate whether pumping in the SRA could affect these potentially senior water rights that have been identified in the CVA, several things should be considered.

- There is extremely limited hydraulic connectivity between the SRA and the CVA AQ3; and in most cases, it is likely to be flow from the SRA to the CVA AQ3. It is extremely unlikely for the hydraulic gradient to allow flow from the CVA AQ3 to the SRA. Therefore, it is expected that there is almost no effect of pumping in the SRA to the CVA AQ3.
- To evaluate whether the exercising of September Ranch's riparian rights would impact those water rights identified in this report that are (or potentially are) senior within the CVA, one must determine whether there is more water available than is needed, and if so, how much water is available. Analyses of CVSIM water balance simulation model results provided by MPWMD for AQ3 and AQ4 were prepared with results as follows:
  - CVA AQ3 - Based on the 45 year CVSIM simulation results provided, the water balance in AQ3 is such that the average difference between the inflow and the outflow is about 7,500 AFY. During the 1984 - 1991 dry period, the average difference between the inflow and the outflow in AQ3 is about 6,800 AFA. When compared to the approximately 2,705 AFA that is needed to meet the estimated maximum annual use in AQ3 described above, it appears that sufficient groundwater is available in storage in AQ3 on average as well as during a dry period to meet the needs of the riparian and pre-1914 appropriative rights holders. Therefore, there appears to be sufficient water in AQ3 with excess flow to meet the needs of the riparian and pre-1914 appropriate rights holders.
  - CVA AQ4 - The analogous analysis of the 45-year CVSIM simulation results provided for AQ4 indicates that the average difference between the inflow and the outflow is about 2,500 AFY. During the 1984 - 1991 dry period, the average difference between the inflow and the outflow in AQ4 is about 2,300 AFA. When compared to the approximately 1,845 AFA that is needed to meet the estimated maximum annual use in AQ4, it appears that sufficient groundwater is available in storage in AQ4 on average as well as during a dry period to meet the needs of the riparian and pre-1914 appropriative rights holders. Therefore, there appears to be sufficient water in AQ4 with excess flow to meet the needs of the riparian and pre-1914 appropriate rights holders
  - Aggregate CVA AQ3 and AQ4 - Since the distribution of riparian and pre-1914 appropriators in AQ3 and AQ4 were estimated and have not been confirmed, it is appropriate to evaluate the water availability in aggregate for AQ3 and AQ4 against the aggregate water rights for AQ3 and AQ4 based on a water balance as summarized below:

    Inflow – Outflow AQ3 for 45 years = 7,500 AFA
    Inflow – Outflow AQ4 for 45 years = 2,500 AFA
    Total Inflow – Outflow for AQ3 and AQ4 for 45 years = 10,000 AFA

    Total Riparian and Pre-1914 Riparian Water Rights for AQ3 and AQ4 = 4,550 AFA which is less than 10,000 AFA available

    Inflow – Outflow AQ3 for 1984 – 1991 dry period = 6,800 AFA
    Inflow – Outflow AQ4 for 1984 – 1991 dry period = 2,300 AFA
    Total Inflow – Outflow for AQ3 and AQ4 for 1984 to 1991 dry period = 9,100 AFA

    Total Riparian and Pre-1914 Riparian Water Rights for AQ3 and AQ4 = 4,550 AFA which is less than 9,100 AFA available

Under existing conditions, there appears to be sufficient water on aggregate in AQ3 and AQ4 to meet the needs of the riparian and pre-1914 appropriate rights holders. Moreover, potential spillage from the SRA is not needed to meet the maximum use in AQ3 and is likely to be part of excess outflow

from AQ3 to AQ4. KJC concludes then any reduction in rejected flow (spillage) from the SRA will not have significant affect on the Carmel River and its underlying aquifer. This conclusion is further supported by the fact that actual use is often much lower than that cited for submittal to the SWRCB.

4.3.3 Environmental Setting

Baseline Water Usage

Kennedy/Jenks' analysis does not include an independent evaluation of the baseline water usage. During the certification of the Final EIR the County Supervisors determined that a baseline of 51 acre-feet per year was appropriate. This amount, however, included within the baseline water pumped after the initiation of the EIR process, and also included water pumped as part of an aquifer test. This methodology was found by the Court of Appeal to be flawed based upon the period of the pumping, the inclusion of water pumped for an aquifer test, and the failure to present documented water usage from prior to the initiation of the EIR:

> "… there is no objection to the EIR's methodology of estimating historical water use on property where no documentation is available to verify actual use. But estimating water used for irrigation where there was no substantial evidence to show that the property was in fact irrigated does not accurately reflect existing conditions. Appellant's argument that it was entitled to use this amount of water for irrigation is not the same as actual use. As various courts, including this one, have held, the impact of the project must be measured against 'real conditions on the ground."

Therefore, as previously stated, this report uses an amount of three (3) acre-feet per year as the appropriate baseline for pre-existing project conditions. This amount was determined by the County as the relevant condition prior to and at the time of the 1995 project application. The amount is based on water usage for a single residence (0.5 AFY) and the amount of water applied for 50 horses (45 gallons per horse per day for a total of 2.5 AFY). The selected baseline appears to be reasonable and representative of aggregate average water usage of undeveloped nonresidential land-use in the Camel Valley.

Hydrologic Setting

Physiography

The northern portion of the project site consists essentially of north-south trending ridges and three canyons (September Ranch, Roach, and Canada de la Segunda) sloping southward to the Carmel River Valley. The drainages are generally deeply incised and have steep canyon walls. The ridges are locally modified by side canyons, erosional gullies, landslides, colluvial wedges, and old river terraces. The southern portion of the project site is a flat to gently sloping, east-west trending, elongated terrace bounded on the north by the sharp slope break with the ridges and on the south by a low knoll. The knoll separates the terrace from the Carmel River channel; the top of the knoll is approximately 60 feet above the lowest elevation of the terrace surface and 100 feet above the elevation of the Carmel River (Kleinfelder 2003).

Hydrometeorologic Setting

Since the lands overlying the SRA are relatively isolated from adjacent watersheds, the main source of recharge is from precipitation. The September Ranch Subdivision Project is about 3¼ miles from the Pacific Ocean in the Carmel Valley and its climate is influenced by fog from the west. The Mediterranean climate of Carmel Valley is typically wet in winter and dry in summer. The rainfall at the September Ranch site is considered to be approximately 18.17 inches in average rainfall years. Table 4.3-2 identifies the 20-year average precipitation within the general project area.

Table 4.3-2: Carmel Valley Rainfall Averages 1959-1978

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Total Precipitation (in.)	3.65	3.05	2.60	1.48	0.29	0.10	0.03	0.09	0.20	0.64	2.32	2.82	17.26
Source: Kennedy/Jenks Consultants, December 2004.													

The rainfall data was recorded at the San Clemente Dam, which is located approximately 17 miles upstream from the proposed project site, is calculated to be 21.4 inches in average rainfall years according to Monterey Peninsula Water Management District (MPWMD). As discussed in Todd (1992), the average rainfall at the September Ranch site is assumed to be 15.1 percent less than that recorded at the San Clemente Dam based on the California Department of Forestry Fire and Resource Assessment Program contour map. Based on precipitation data from the San Clemente Dam, total precipitation for representative average water years 1996 and 1997 was 19.02 and 18.40 inches, respectively. Average precipitation for representative drought water years 1987 through 1991 was 11.0 inches. This data was used by KJC to assess potential recharge to the September Ranch Aquifer.

Soils

Soils present on the September Ranch terrace include Lockwood series shaly loam (LeC), Chualar loam (CbB), xerorthents dissected (Xd), and Arroyo Seco gravelly sandy loam (AsB) (Kleinfelder 2003).

LeC soils are black, slightly acid, shaly and very shaly loams that are underlain by brown very gravelly sandy loam. They contain 45 to 50 percent gravel and 10 to 20 percent cobbles. The CbB has a surface layer of loam to light sandy clay loam that is commonly 10 to 20 inches thick. The substratum varies considerably over short distances and in places is underlain by gravel, cobbles, or clay deposits. The Xd soils consist mainly of unconsolidated or weakly consolidated alluvium that commonly contains pebbles, and cobbles. AsB soils are gently sloping soils on alluvial fans and plains. The soils are grayish brown, neutral to mildly alkaline, gravelly sandy loam.

Geology

The following is a summary of the site geology and a more detailed discussion is included within Section 4.2, Geology and Soils and within Appendix B of this REIR. The basal geologic unit within the proposed project site area is the Aguajito Shale member of the Miocene Monterey Formation (Tm), consisting generally of thin-bedded siliceous shale (Kleinfelder 2003; Geoconsultants 1995; Todd 1992). The Tm is exposed in the hills in the northern portion of the project site, on the Knoll in

the southeast portion of the project site, and has been encountered in water wells and detected in vertical electric sounding (VES) probes conducted at the site (Todd 1997).

The Tm is overlain by several unconsolidated clastic sedimentary deposits. The oldest unit present in the southern part of the proposed project site is older alluvium terrace deposits that have been divided by Todd (1992) into units, dating from the youngest:

- Alluvium (Qg and Qa) and colluvium (Qcol) landslide deposits that occur in the northern and southern parts of the site (Geoconsultants 1995; Kleinfelder 2003; Todd 1992);
- Younger, primary water bearing unit Qoa1 shown as Qt1 in Kleinfelder (2003); and
- Older low-permeability Qoa2 that is classified as an aquitard separating Qoa1 and the underlying Tm. This unit impedes groundwater flow between the SRA and CVA at certain locations.

The Hatton Canyon Fault

A trace of the Hatton Canyon Fault (the name of a group of northwest-trending, steeply-dipping reverse faults) (Rosenberg and Clark 1994), traverses the project site from the northwest to the southeast, slightly southwest of the slope break dividing the flatter southern portion of the site from the hilly northern portion of the site (Kleinfelder 2003). Trenches excavated by Terratech in December 2002 show landslide deposits offset along this trace, suggesting that the fault is active.

Based on the mapped location of the Hatton Canyon fault and the best available well locations at September Ranch, the September Ranch wells may all be southwest of the Hatton Canyon fault (see 24.3-1, Well Locations). The wells are not located in a portion of the aquifer that would be confined by the fault. It is not currently known if the Hatton Canyon fault offsets alluvial material within the September Ranch terrace. If the fault extends upward to near the terrace surface, it could form a full or partial (leaky) barrier to groundwater flow.

Based on Kleinfelder's 2003 findings, there is no evidence currently known to suggest that the Hatton Canyon fault serves as a hydraulic barrier or conduit of groundwater to influence water resources in the SRA or influence the SRA's hydraulic connection with the CVA.

Surface Water Resources and Drainage

The drainages dissecting the northern portion of the project area generally flow only during precipitation events. The Carmel River flows generally parallel to the southern boundary of the site and is located approximately 800 feet to the south at the closest approach. Stream flow in the Carmel River can vary greatly over the year, with the greatest stream flow in the winter and the lowest in the summer.

As described in Kleinfelder (2003), drainage courses at the proposed project site are the result of surface-water erosion controlled by relatively uniform bedrock. The central September Ranch Canyon is incised in a typical dendritic drainage pattern. Generally, drainage courses at the site are irregular only where they have been interrupted by local deep-seated landslides such as in the northwest and northeast property corners.

Observed channel bottoms of the drainage courses are composed of sandy or clayey soil with little gravelly surface material. Surface water generally flows relatively unimpeded to the terrace deposit lying adjacent to the base of the ridges. Drainages do not dissect the terrace, suggesting that the surface water infiltrates the terrace and recharges the groundwater (Todd 1992).

The central watershed was estimated at approximately 561 acres, adjusting for elevations, based on a "summed-element" method of calculation performed in a geographic information system.

Current Water Usage

Current groundwater usage at the Site (which is not considered baselined for purposes of CEQA) is primarily for pasture irrigation. The current pumping from the single production well located at the Site is approximately 99 acre feet per year (AFY) (Todd, 2002). More pumping occurs in the six summer months from June to December than during the remaining six months of the year, with the summer extractions totaling approximately 59 acre feet (AF). Water pumping is also somewhat heavy in the spring of each year resulting in the extraction of 38 AF on average.

Water levels at the closest non-September Ranch well, the Brookdale Well, exhibited drops in water levels on the order of 5 to 7 feet corresponding to the usage months of the September Ranch well. However, water levels in this well have consistently recovered later in the year to about 40 feet mean sea level (MSL) as indicated by available water level data collected since 1996.

September Ranch Groundwater Basin/Aquifer

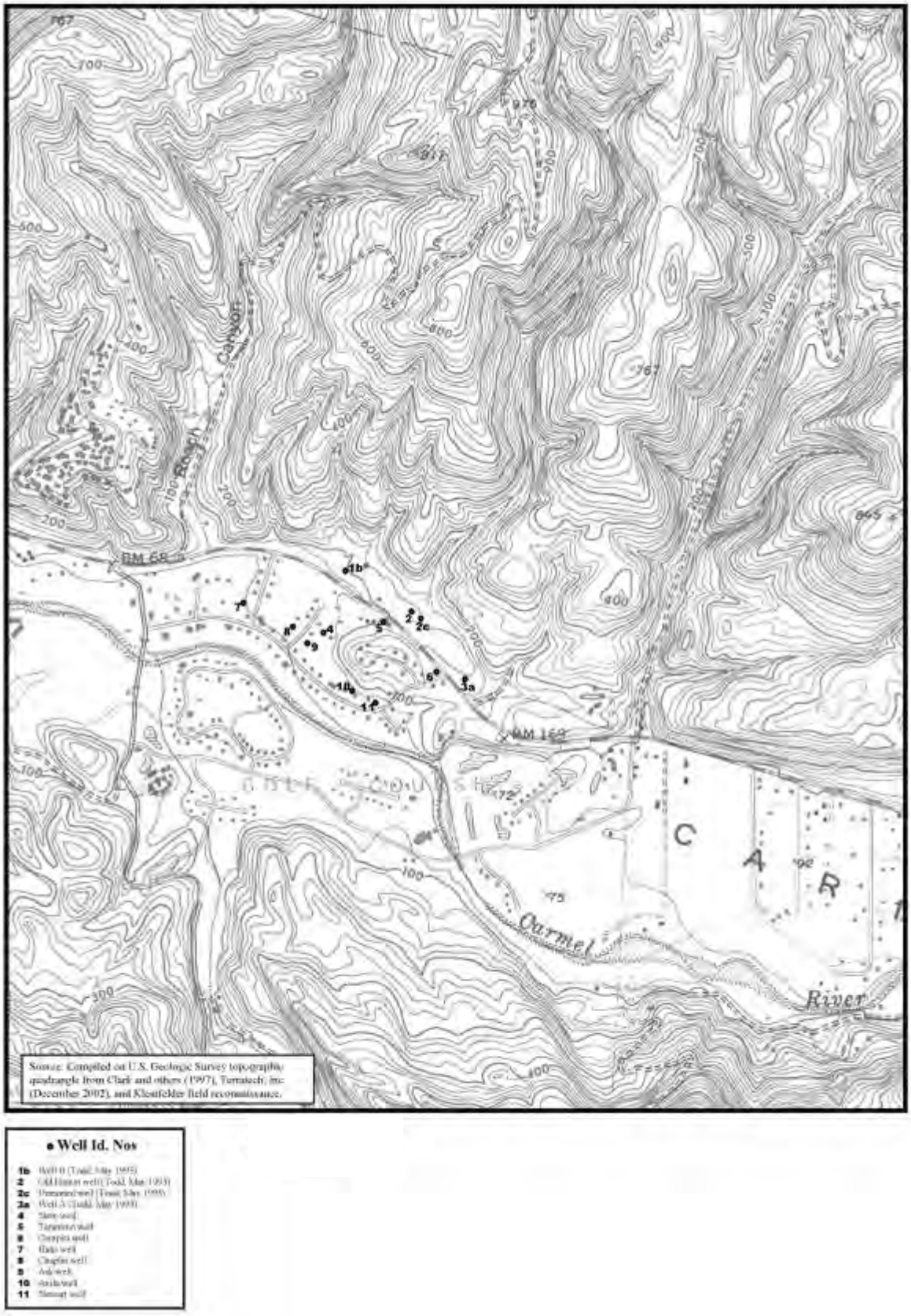
The September Ranch Groundwater Basin, also referred to as the September Ranch Basin (basin) or September Ranch Aquifer (SRA) (Exhibit 4.3-3) is a small and nearly closed basin bound almost entirely by Monterey Shale™. In this independent evaluation of hydrogeologic evidence collected by others, Kennedy/Jenks concludes that the September Ranch basin is bounded on the north by the hills, on the south by the Knoll, on the east by exposed Tm east of the Knoll, and on the southwest it contacts the CVA across a subsurface ridge of Qoa_2 (see Cross-section M-M' on Exhibits 4.3-4a through 4.3-4c).

The surface area of the SRA, as defined by the lateral reach of the water table, changes with seasonal variations of the water table and with yearly variations in rainfall. The basin area is relatively larger during average rainfall years and smaller during below average rainfall periods. The saturated surface area is about 51.8 acres in average rainfall periods (e.g., water year 1997) and about 49.2 acres in below average periods (e.g., water years 1998, 1999, and 2000).

The fluctuations in basin size between average and drought periods affect the storage volumes estimates calculated from wells and VES data for the three aquifer boundaries and properties (Qoa_1, Qoa_2, and Tm). Details of groundwater storage are discussed in further detail below.

Water Bearing Units in the SRA

There are two main water bearing units , that collectively are referred to as the SRA. The main water-bearing unit in the SRA is the Qoa_1, although some water is stored in the Qoa_2 and Tm (Todd 1997). To assess groundwater storage, the shape of the basin boundaries has to be understood. The shape of the basin is shown in Exhibit 4.3-5 and Exhibit 4.3-6. Additionally, Exhibit 4.3-5 depicts the



Source: Kleinfelder, Inc., November 2004.

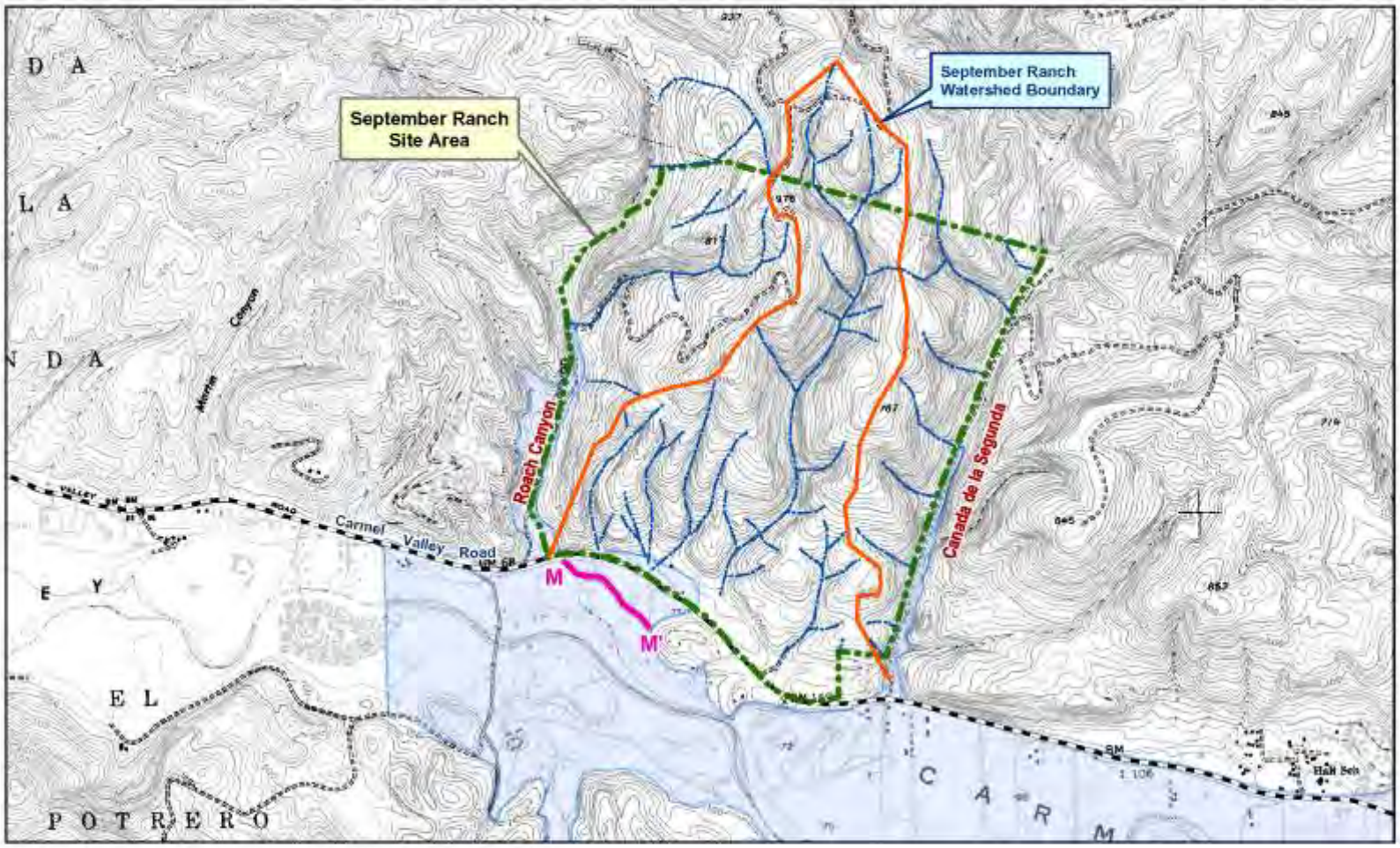
NORTH

1777 888.5 0 1777

SCALE IN FEET

Michael Brandman Associates

Exhibit 4.3-2
Well Locations Map



Source: Kennedy/Jenks Consultants, November 2004.

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2461 1230.5 0 2461

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Michael Brandman Associates

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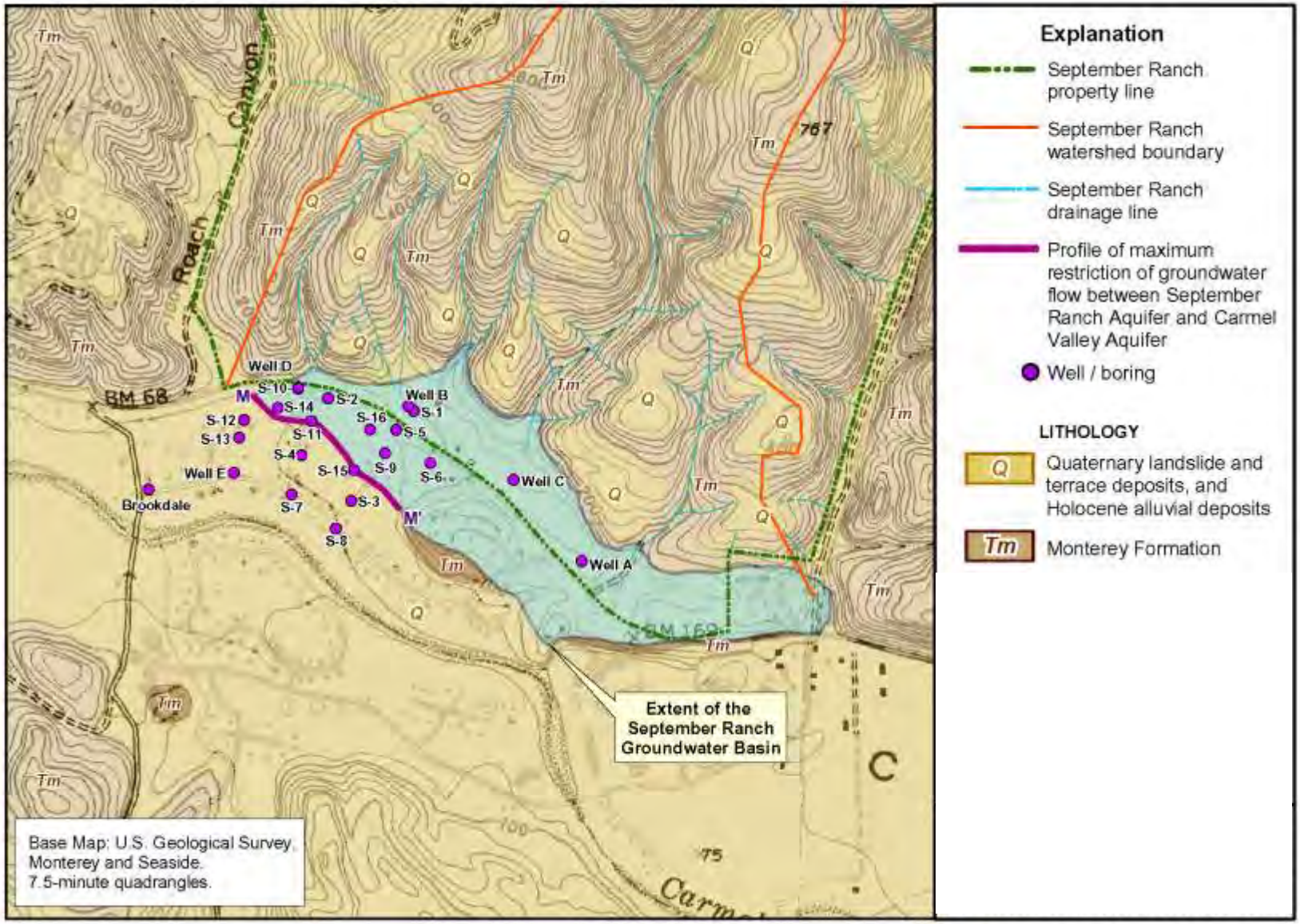
Exhibit 4.3-3
Hydrologic Site Setting Map



Source: Kennedy/Jenks Consultants, November 2004.

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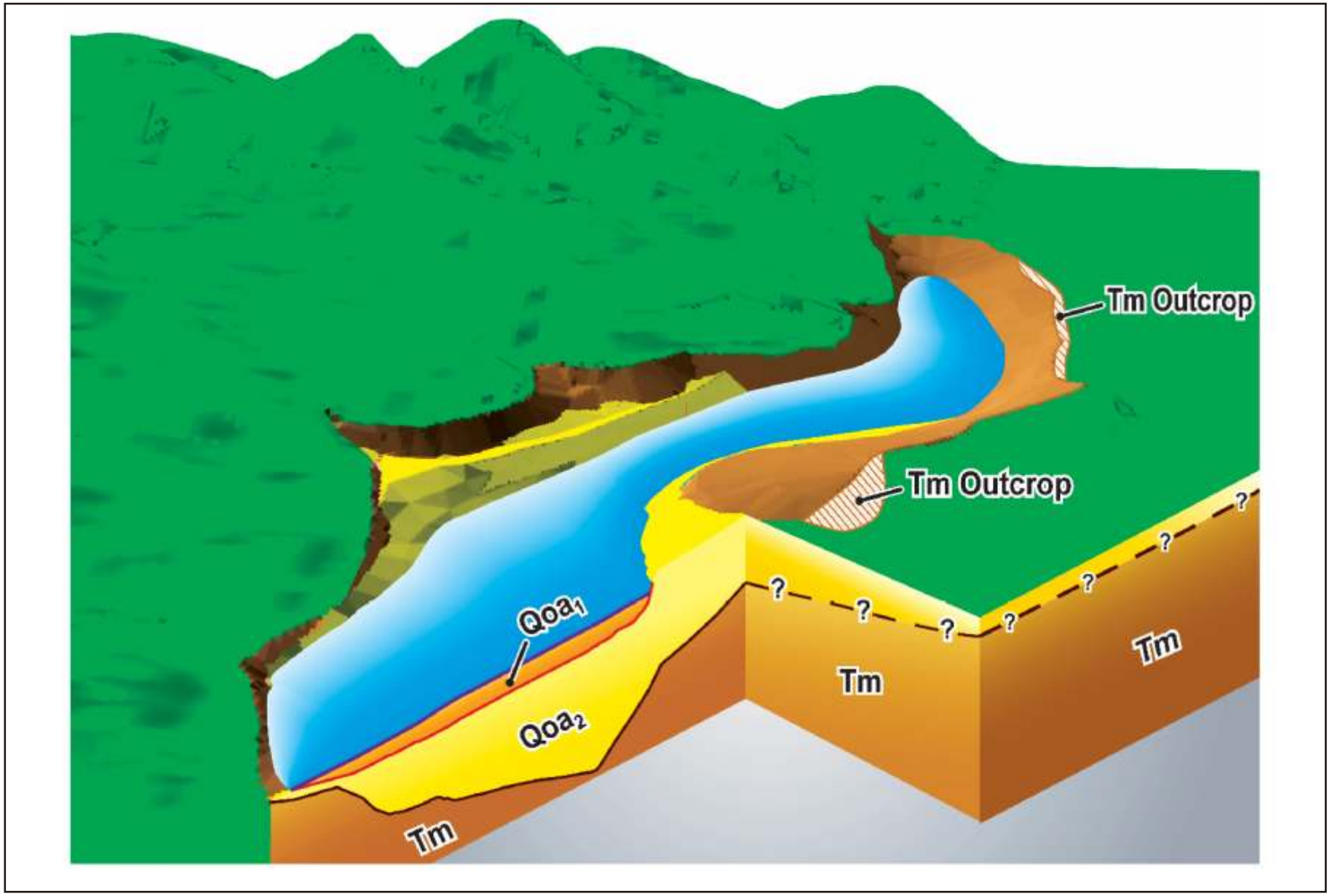
Michael Brandman Associates

Exhibit 4.3-4a
Cross-Sections and Conceptual Modeling



Source: Kennedy/Jenks Consultants, November 2004.

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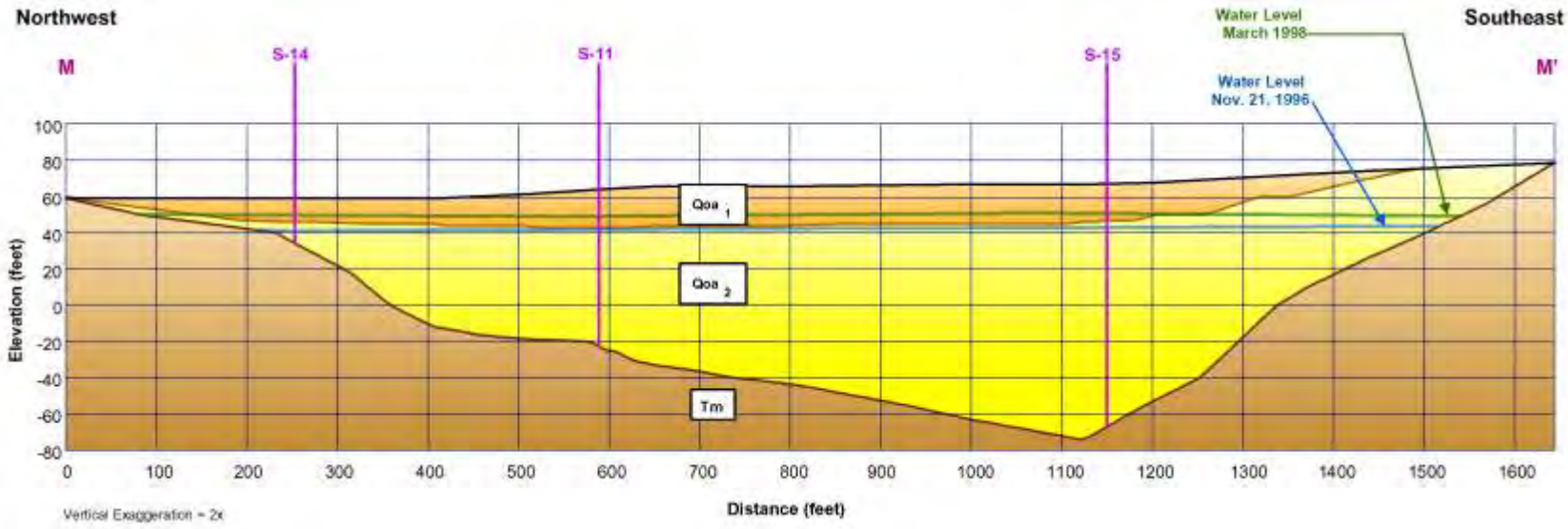
Michael Brandman Associates

Exhibit 4.3-4b
Cross-Sections and Conceptual Modeling



Source: Kennedy/Jenks Consultants, November 2004.

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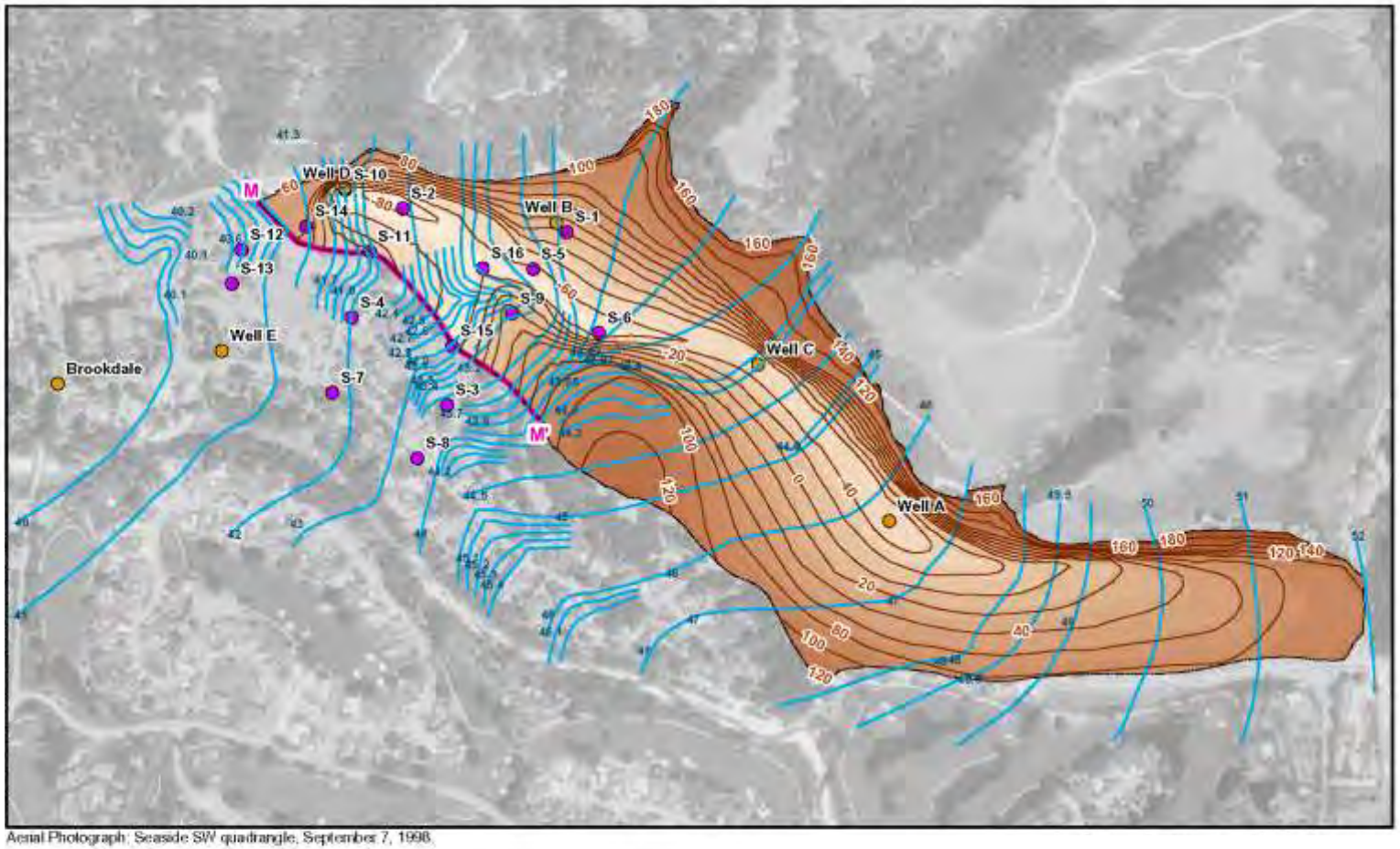
Michael Brandman Associates

Exhibit 4.3-4c
Cross-Sections and Conceptual Modeling



Source: Kennedy/Jenks Consultants, November 2004.

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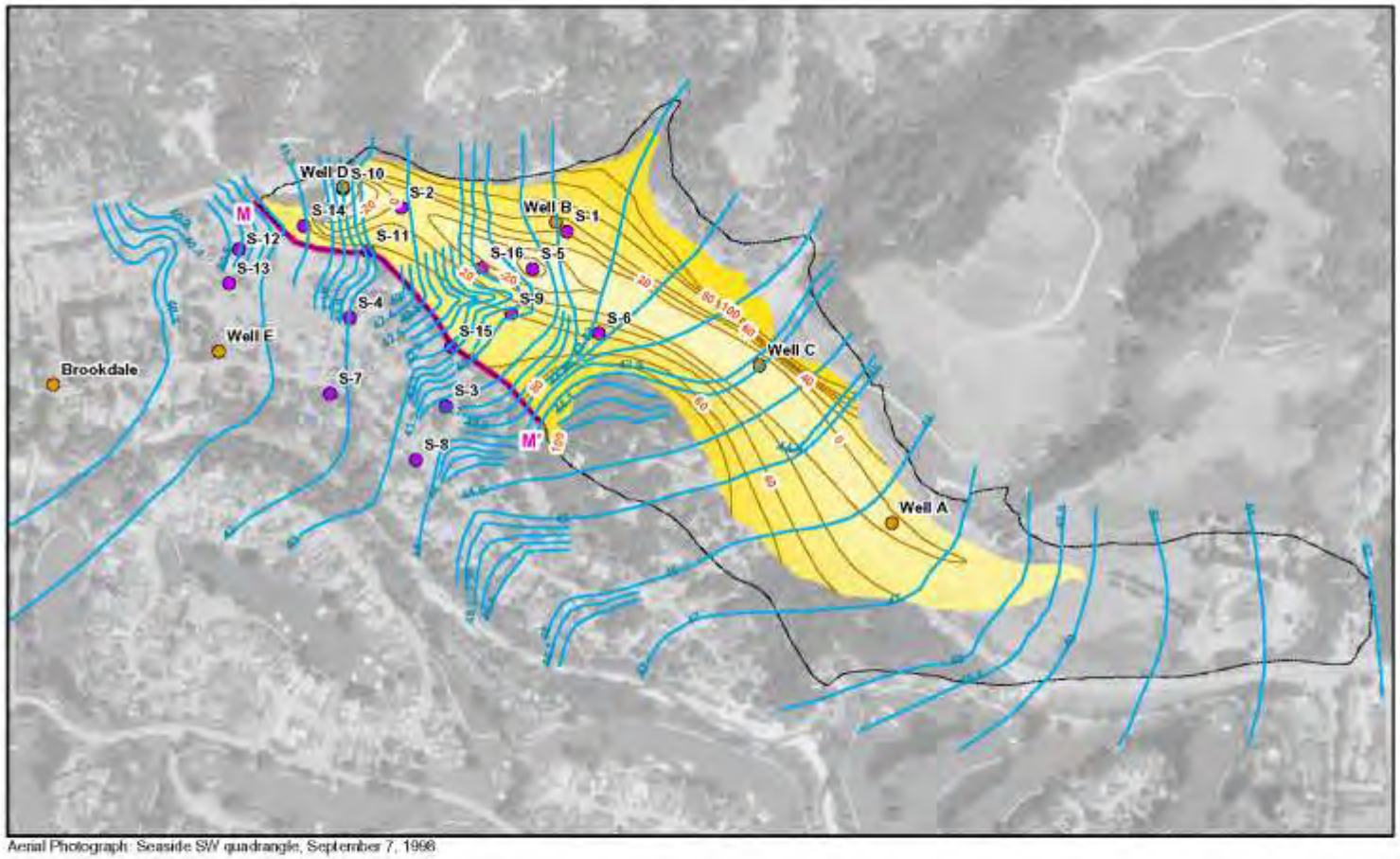
Michael Brandman Associates

Exhibit 4.3-5
Top of Monterey Formation and Groundwater Levels



Source: Kennedy/Jenks Consultants, November 2004.

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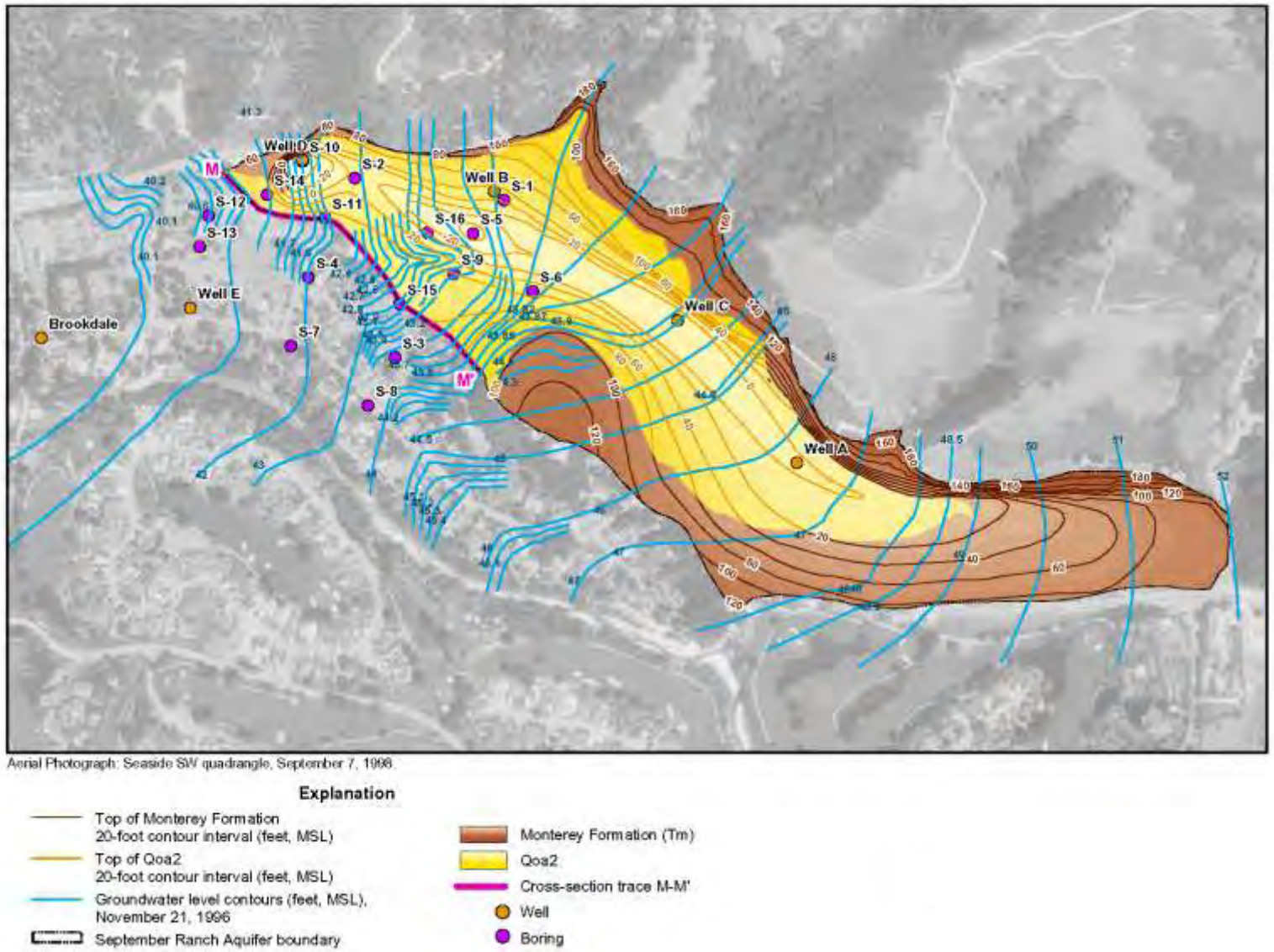
Exhibit 4.3-6
Top of Older Alluvium - Qoa_2 and Groundwater Levels

Michael Brandman Associates



Source: Kennedy/Jenks Consultants, November 2004.

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SCALE IN FEET

Michael Brandman Associates

Exhibit 4.3-7
Combined Top of Monterey Formation and Older Alluvium - Qoa_2

elevation of the top of Tm. As identified in Exhibit 4.3-5, to the east the Tm is shallow and deepens to the west, forming a depression, or trough in the west and southwest portions of the basin. Exhibit 4.3-6 gives the elevation of the top of the Qoa_2 which shows that it is deepest in the central part of the basin and shallow in the southwest part of the basin. This indicates that the Qoa_1, the more transmissive unit and the main portion of the aquifer at the site, is thickest in the central to west part of the basin.

In addition, Exhibit 4.3-6 in conjunction with Exhibit 4.3-4b and Exhibit 4.3-4c illustrate the ridge of Qoa_2 , which borders the southwest side of the basin. The length of this boundary is about 1,620 feet or approximately 20 percent of the basin boundary. Contours of equal elevations on the top of Qoa_2 and depiction of the ridge-like feature (elevation 60 feet above mean sea level [AMSL]) of the aquitard are illustrated in Exhibit 4.3-5 and Exhibit 4.3-6.

Exhibit 4.3-4c shows the only portion of the SRA in hydraulic contact with the CVA. Evidence of this connectivity was first interpreted from borings, water well logs, and a VES survey conducted by Todd (1992 and 1997). The KJC study provides an independent assessment of the shape of the SRA and degree of connectivity between the SRA and the CVA. KJC independently constructed a three-dimensional (3-D) model of the physical boundaries of the basin (See Exhibit 4.3-4b) using existing data, including that presented in Todd (1997) and Kleinfelder (2003).

In the previous Final EIR (1998), the SRA was treated as an aquifer with a finite storage and in limited communication with the adjacent CVA. KJC concurs with this conclusion and notes that recent evidence does not suggest otherwise.

Groundwater Storage

The analysis included an independent estimate of groundwater storage by using existing data as presented in Todd 1992 and 1997. KJC refined Todd's estimates by constructing more detailed elevation contours of the three hydrologic formations Qoa_1, Qoa_2, and the Monterey Shale. A 3-D GIS was used to calculate volumes from the aquifer units.

Groundwater stored beneath the September Ranch project site is entirely within the nearly closed basin bounded almost entirely by Monterey Shale (see Exhibit 4.3-4a). The limited hydraulic connectivity with the CVA occurs only when groundwater levels in the SRA are higher than the top of the Monterey Shale bedrock so that seasonally excess groundwater from the SRA spills over and serves as recharge to the CVA. This is known as "rejected recharge" in that the spilling water cannot recharge the SRA (as the SRA is full), and so the water is rejected from the SRA and instead goes into the CVA.

The available groundwater storage was calculated by plotting the elevations of the top of the Qoa_2 aquitard and the top of the Tm from well logs, soil borings, and VES data from the September Ranch site and from neighboring domestic wells in the CVA immediately south of the September Ranch project area into a 3-D GIS program (Exhibit 4.3-4a). The data was presented in Todd (1992 and 1997).

The top-of-formation elevations of the Tm and Qoa_2 are combined in Exhibit 4.3-7 to show the extent of the functional bottom of the September Ranch basin. Groundwater elevation contours for November 1996 (water levels recorded prior to the major aquifer test of late 1996) are also shown on

Exhibit 4.3-7. The thickness of the saturated Qoa_1, and therefore the functional thickness of the available storage in the entire September Ranch basin, can be estimated using Exhibit 4.3-7 by subtracting the top of formation elevation from the water table elevation.

Data for Calculating Storage for Normal Rainfall Years

It is important to note that a conservative calculation of aquifer storage is primarily a function of the actual recorded water levels, which are themselves entirely dependent on surface recharge. Hence, in selecting yearly water level data for calculating storage for normal and below average rainfall periods, average and below normal surface recharge values are used (instead of using total annual rainfall amounts) as indicators of normal and below average groundwater recharge periods.

The groundwater elevations for the water years 1997 (October through December) and 1998 (January through September) were used to represent average rainfall years in calculating storage. Estimates for pumping at the project site are based on available pumping data from Todd 2002 and PG&E electrical consumption billings from 1996. KJC used the data from the CVSIM for water year 1997 to represent average conditions. Surface recharge in the CVSIM model represents the amount of surface recharge that is available to recharge groundwater on a monthly basis. According to the CVSIM model, a total of 7,085 AF of surface recharge was recorded to the CVA in 1997 and 7,664 AF in 1998. According to KJC, these are fairly average recharge values (see Table 3, Appendix B of Appendix C of this REIR).

Data for Calculating Storage for Below Average Rainfall Years

The water year 1999 was used to represent a water year that received markedly below average surface recharge, with a total recharge of 5,091 AF (Table 3, Appendix B of Appendix C of this REIR). This value is the second lowest surface recharge value calculated by the MPWMD since 1981; the lowest groundwater recharge occurred in 1994, with only 4,720 AF of groundwater recharge. Hence, a conservative aquifer storage value is attained by using water levels recorded in the 1999 low surface recharge year. It is important to note that data from 1999 was used instead of water levels from drought years 1987 - 1991 because water levels were not available for these years since the September Ranch wells were installed after the 1991 drought.

Results of Analysis of Seasonal Storage

Table 4.3-3 below, is a summary of the results of the seasonal storage analysis.

Table 4.3-3: Seasonal Storage Analysis Results

Average Rainfall Seasons	Qoa_1 (AF)	Qoa_2 (AF)	Total (AF)	Below Average Rainfall Seasons	Qoa_1 (AF)	Qoa_2 (AF)	Total (AF)
12/1997 Fall	167	102	269	12/1998 Fall	183	104	287
3/1998 Winter	217	106	323	3/1999 Winter	193	105	297
6/1998 Spring	220	106	327	6/1999 Spring	185	104	289
9/1998 Summer	192	105	297	9/1999 Summer	170	102	273
Yearly Average	199	105	304		183	104	287
Source: Kennedy/Jenks Consultants, December 2004.							

The groundwater storage in the September Ranch basin was previously estimated by Todd (1992) at 261 AF for Qoa_1, and 121 AF in the lower permeability Qoa_2, giving an average total estimated storage of about 382 AF. Todd (1992) developed the storage estimates by using an average thickness and depth of the Qoa_1 and Qoa_2 units. But despite Todd's use of an average thickness, the base of each aquifer unit is actually irregular in elevation and the groundwater surface elevation is dependent on seasonal rainfall. Thus, we believe that Todd's methodology unduly inflates the estimated quantity of groundwater storage in the SRA. KJC also notes that on August 23, 1994 the MPWMD entered in a Memorandum of Understanding with the September Ranch Partners, which used the value of 261 AF as estimated storage.

KJC's independent analysis of seasonal storage presents a refinement of the original Todd estimates. KJC's analysis estimates that about 304 AF is available in storage in average rainfall years and about 286 AF in a below average year. The 304 AF amount for average rainfall years falls between the original Todd estimate of 382 AF and the number used in the MOU with the MPWMD.

Groundwater Recharge

Groundwater recharge in the September Ranch basin is primarily through infiltration of precipitation. The September Ranch terrace is largely recharged by streams originating in the uplands of the ranch that discharge (drain) water to the alluvium and Qoa_1 that make up the primary water-bearing zone of the terrace (Kleinfelder 2003). Drainage within the September Ranch watershed is fairly efficient because of the well-defined (high relief) ridges (see the red line marking the watershed boundary in Exhibit 4.3-3) that influence the convergence drainage pattern within the watershed. Surface water generally flows relatively unimpeded to the terrace deposit lying adjacent to the base of the ridges.

The amount of monthly and seasonal recharge for the site was developed by utilizing rainfall data collected at the San Clemente Dam, approximately 17 miles upstream of the site (see Table 4.3-2). As discussed previously in this section (see Hydrometeorlogic Setting), a 15.1 percent reduction factor was used to calculate monthly rainfall at the September Ranch site. Monthly rainfall values were applied to the watershed area of 561 acres with an evapotranspiration (ET) loss-factor of 70 percent and an infiltration based on Soil Conservation Service method TR-55. These factors were also presented in Todd (1992) with concurrence by the MPWMD. Recharge estimates were established by subtracting surface runoffs from precipitation on a monthly basis. Resultant monthly recharge values are listed in Appendix C of this REIR and the annual cumulative recharges are summarized in Table 4.3-4.

Table 4.3-4: Annual Cumulative Recharge Values

Average Water Year	San Clemente Dam Rainfall (in)	September Ranch Site Precipitation Over 561 Acres (AF)	Net Recharge with ET-loss of 70% Adjusted for Infiltration (AF)	Below Average Water Years	San Clemente Dam Rainfall (in)	September Ranch Site Precipitation Over 561 Acres (AF)	Net Recharge with ET-Loss of 70% Adjusted for Infiltration (AF)	Net Recharge with ET-Loss of 85% (AF)[1]
1996	22.4	889.1	262.0	1987	11.02	437.4	131.2	65.6
1997	21.7	860.1	244.0	1988	11.07	439.4	131.8	65.9
—	—	—	—	1989	12.80	508.0	152.4	76.2

Table 4.3-4 (cont): Annual Cumulative Recharge Values

Average Water Year	San Clemente Dam Rainfall (in)	September Ranch Site Precipitation Over 561 Acres (AF)	Net Recharge with ET-loss of 70% Adjusted for Infiltration (AF)	Below Average Water Years	San Clemente Dam Rainfall (in)	September Ranch Site Precipitation Over 561 Acres (AF)	Net Recharge with ET-Loss of 70% Adjusted for Infiltration (AF)	Net Recharge with ET-Loss of 85% (AF)[1]
—	—	—	—	1990	13.09	519.6	155.9	77.9
—	—	—	—	1991	16.87	669.9	182.2	81.7
Yearly Average			**253**	**—**	**—**	**—**	**151**	**73**

Note: estimated runoffs were subtracted from ET-loss corrected recharges rates

[1] Adjusted for infiltration

Source: Kennedy/Jenks Consultants, December 2004

The 1998 Final EIR invalidated by the Court of Appeal utilized a factor of 242 AFY of recharge for average years and zero recharge for drought years. The analysis above indicates that range from 244 to 262 AF of potential recharge is available to the September Ranch terrace during an average rainfall year. The MPWMD and the Monterey County Health Department take the position that during severe droughts all infiltrated moisture is taken up by vegetation and other losses resulting in zero recharge being available to the groundwater basin. It is KJC's opinion that for below average rainfall years a zero recharge is unrealistic given the Mediterranean climate. Thus, KJC maintains that an ET loss-factor of 70 percent is realistic for both average and below average precipitation years. However, to address this difference in opinion and for comparative analysis, a conservative 85 percent ET loss-factor is used for this Draft REIR for below average rainfall years. As shown in Table 4.3-4, the 85 percent ET results in lower recharge values for this conservative recharge scenario with estimates ranging from 65.6 AFY to 81.7 AFY and an average of 73 AFY. Additionally, as identified in Table 4.3-4, the analysis conducted by KJC indicates that a range of 244 to 262 AF of potential recharge is available to the September Ranch terrace during an average rainfall year.

Groundwater Gradient

The typical groundwater flow pattern in the SRA and the CVA is illustrated in Exhibits 4.3-5 and 4.3-6. The groundwater elevations of these figures were recorded on November 21, 1996, prior to a large-scale aquifer test. The groundwater on this date flowed from the east end of the September Ranch basin, from Canada de le Segunda, where groundwater is at 52 feet above mean seal level (AMSL), towards Roach Canyon in the west, where groundwater is at 41 feet AMSL (Well D). The groundwater gradient magnitude shown in these exhibits is approximately 0.0025 feet per foot (ft/ft) in the eastern half of the basin and about 0.0022 ft/ft in the western half of the basin where the SRA meets the CVA. This is a relatively shallow gradient that indicates a low velocity. The northwest to west gradient direction is generally parallel to the Carmel River flow direction.

The KJC study also focused on the difference in groundwater gradients between:

- Four quarters or seasons in a year; and
- Average rainfall periods and below average years.

The objective of this more detailed analysis of groundwater gradient was to quantify the volume of groundwater exchange between the SRA and CVA across the ridge of Qoa_2 (see Exhibit 4.3-4c),

given that KJC established only an extremely low level of connectivity between the two water resources. The approach is to examine the direction of groundwater gradient based on water levels in the SRA and those in the CVA. The most suitable and available data to support this analysis are the water levels measured in Wells B and D located in the September Ranch basin, and Well E and the Brookdale well, located in the CVA. These wells are located in a roughly linear fashion, across Cross-Section M-M'.

In this analysis, it is not enough to base the use of data and seasonal gradient characterizations on rainfall amounts generally; the corresponding surface recharge rates in normal and below average precipitation periods must be assessed as well.

The reason for the focus on surface recharge rates (rather than total rainfall) is that the cumulative volume of surface recharge directly influences groundwater level. In contrast, a certain quantity of the total rainfall at the site is eventually discharged by surface runoff into the Carmel River and, hence, does not influence groundwater levels. A good example of this is the intense rainfall month of February in 1998 (18.24 inches), which largely did not influence groundwater levels because the majority of the intense rains became runoff into the Carmel River. For this reason, KJC chose data sets of groundwater levels with equal emphasis on surface recharge rates as represented in the CVSIM subunit 3 results (see Table 3, Appendix B of Appendix C of this REIR).

Normal Rainfall and Surface Recharge Years for the September Ranch Area

KJC considered that the most representative period of normal rainfall and surface recharge to characterize groundwater gradients are the years 1996 (8,090 AF), 1997 (7,085 AF), and 1998 (7,664 AF) (see Appendix B of the hydrogeologic report in Appendix C of the Draft REIR). Since there was a 270 gallons per minute (gpm) 47-day aquifer test conducted during late 1996 through February 1997, water levels measured in late 1997 through the first three quarters of 1998 were used to calculate gradients and thus to avoid the post aquifer testing recovery period of lower than normal water levels.

Below Normal Rainfall and Surface Recharge Years for the September Ranch Area

KJC considers that the most representative below average rainfall and surface recharge years are 1987 through 1991. Since water level data for the SRA are not available for these years, KJC chose a comparable period of low rainfall in water year 1999 (5091 AF of recharge and 17.41 inches of rainfall) to serve as surrogate data set for this analysis.

Exhibit 4.3-8 graphically illustrates data from these wells for an average rainfall and surface recharge water year of 1997, a below average rainfall water year of 1999, and the record drought period of 1989 and 1990. Additionally, the data is presented by quarters or by seasons in the year. The boundary between the SRA and the CVA is depicted in Exhibit 4.3-8, which illustrates groundwater flow direction between the two systems. Table 4.3-5 is a summary of groundwater gradients calculated between Wells D, E, and the Brookdale wells.

Table 4.3-5: Calculated Well Groundwater Gradients

Average Rainfall Water Year 1997	Gradient Between Well D and Brookdale Well	Below Average Rainfall Water Year 1999	Gradient Between Well D and Brookdale Well	Below Average Rainfall Water Year 1989	Gradient Between Well E and Brookdale Well
12/1997 Fall	-0.0014	12/1998 Fall	-0.0016	9/1989 Fall	-0.013
3/1998 Winter	-0.0059	3/1999 Winter	-0.0022	—	—
6/1998 Spring	-0.0030	6/1999 Spring	-0.0020	—	—
9/1998 Summer	-0.0021	9/1999 Summer	-0.0042	—	—
Average	-0.0031	Average	-0.0025	—	—

Note: negative sign indicates groundwater flow from the SRA to the CVA.
Source: Kennedy/Jenks Consultants, December 2004.

Water level data from several seasons were compared to assess gradient direction and magnitude. Within the September Ranch basin, groundwater typically flows toward Well C (located near the pumping well SR 1). Near the SRA-CVA contact at the southwest part of the SRA, flow is generally southerly from the SRA to the CVA.

Groundwater Gradient in Aquifer Tests

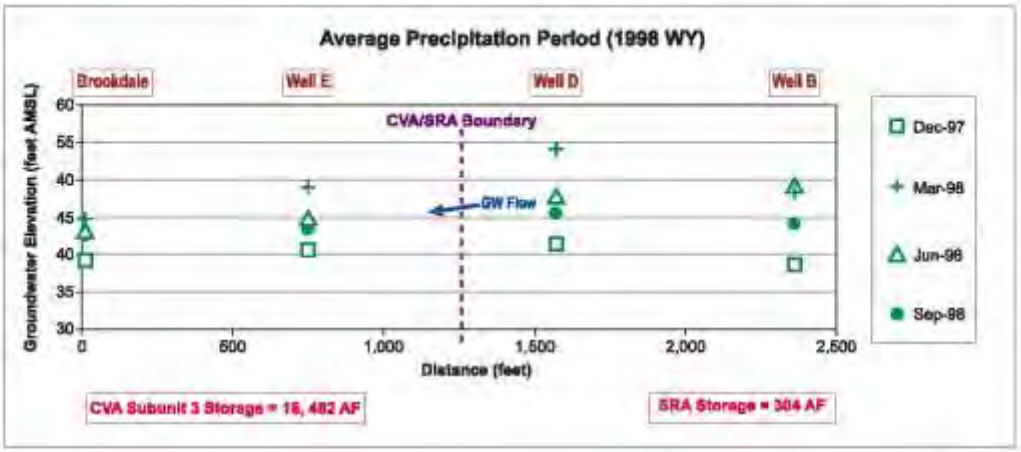
The groundwater gradient before and during an extensive 47-day aquifer test concluded in the winter of 1996/1997 as shown in Todd (1997). The direction of the groundwater gradient prior to the aquifer test in the September Ranch basin and the adjoining CVA was northwest to west, as depicted in Exhibits 4.3-5 and 4.3-6.

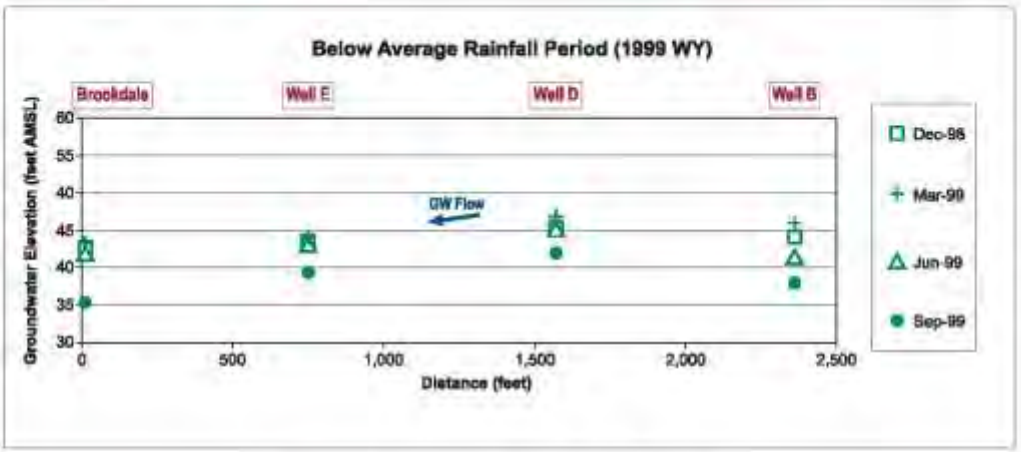
The groundwater elevations contoured during the aquifer test suggest a greater influence on water levels in the September Ranch basin compared to water levels in the CVA, although it appears the aquifer test did have some influence on the CVA. The 270 gpm pumping rate almost instantly created a groundwater divide at the hydraulic contact between the two systems and at Well D. The divide shifted further southwest to Well E on day 19 of the test. The groundwater divide shifted back towards Well D in January 1997 near the end of the test. The occurrence and shifting of the groundwater divide is indicative of impeded or constricted flow due to the ridge-like feature made up of mainly Qoa_2 aquitard material at the location of M-M' or between Wells D and E (see Exhibit 4.3-6). It is likely that the movement of groundwater in this area is both impeded by the less-permeable material and constricted above the ridge-like structure in the Qoa_1 material, the path of less resistance.

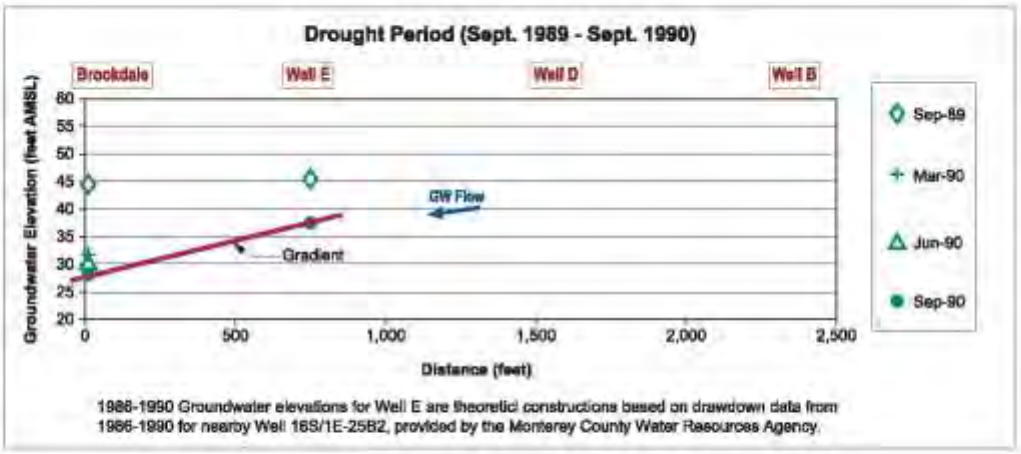
KJC agrees with the comments by the MPWMD that results and interpretation of the 1996 47-day aquifer test are debatable, and that the response in wells closer to the Carmel River is less than

expected, probably due to the suspected effect that concurrent rainfall and high river flows had on water levels during the aquifer test.

However, water levels in Well D in both the 1992 and 1996 aquifer tests recovered at slow rates after the pumping tests. Based on its location, KJC believes that water levels in Well D are responding







Explanation

CVA Carmel Valley Aquifer

SRA September Ranch Aquifer

GW Groundwater

Source: Kennedy/Jenks Consultants, November 2004.

Michael Brandman Associates

Exhibit 4.3-8
Groundwater Gradients Across Cross-Section M-M

first to recharge in the SRA and secondarily to recharge from the CVA. In the CVA, the large volume of river recharge along the Carmel River after rainfall sends rejected outflow towards the SRA. KJC concludes that the rise in water levels after the test in Well D is in response to the rise in water levels within the SRA due to groundwater recharge from infiltration and drainage of the September Ranch uplands. Records show that overall water levels rose slowly and stayed depressed in the summer and fall of 1997.

KJC also suggests that it required unique conditions, with multiple stimuli, including a concurrent 47-day aquifer test with a pumping rate of 270 gpm and a large rain event, to produce an appreciable exchange of groundwater from the CVA to the SRA. Specifically, the drawdown during the pumping test created a significant gradient towards the SRA at the location of the groundwater divide (apparent in the pumping test groundwater level contours). The gradient towards the SRA was further enhanced by an excess water level rise in the CVA due to excess recharge in the Carmel River Basin, sending appreciable rejected underflow towards the SRA. This interpretation is supported by the rapid rise in water levels after rainfall in the CVA, which KJC believes is due to the increase in river stage and the rise in groundwater levels in the CVA. The overall water level rise in the CVA is consistent with those in wells closer to the Carmel River. These unique conditions are not expected to be replicated with the lower and slower pumping rates projected for the project because the total extractions during the 47 day test would roughly equal the total extractions expected during one year of project operations.

4.3.4 Project Impacts

Standards of Significance

The project will have a significant water supply and availability impact if it will:

- Substantially degrade or deplete groundwater resources;
- Interfere with groundwater recharge;
- Use water in a wasteful manner.

In addition, in accordance with local and regional mandates for water resources management, the project will have a significant water supply and availability impact if it will:

- Increase the pumping and demand on the Carmel Valley Aquifer;
- Result in a yield in the groundwater system that is not sufficient to provide the project water demand on a long-term average basis and during droughts; or
- Substantially decreases the availability of groundwater to existing users of the same groundwater basin.

Impact Analysis and Mitigation Measures

Less than Significant Impact - Substantially Degrade and Deplete Groundwater or Interfere with Groundwater Recharge: Table 4.3-6 provides a comparison of the baseline water demand and the projected water demand in relation to the findings of the 1998 Final EIR. As shown in Table 4.3-6, the water demand of the September Ranch Subdivision project at build-out is expected to be 57.21

AFY. This is based upon interior and exterior water use at homes, use at the equestrian center, and system losses.

Table 4.3-6: Baseline and Projected Water Demand at Build-out

	Proposed Project	1998 Final EIR
Baseline Use	3 AFY	45 AFY
Current Use	99 AFY	99.39 AFY
Projected September Ranch Water Demand	57.21* AFY	61.15 AFY
Difference between Baseline and Project Use	54.21 AFY	16.15 AFY

* Todd (1997) assumed a demand of 66.7 AFY, based upon consumption of 55.6 AFY and a 20% sustainability margin.
Source: Kennedy/Jenks Consultants, December 2004.

The estimates of annual water demand for the proposed project are based on average water use of 0.50 AFY for single-family residences and 0.231 AFY per unit for multi-family areas. The total housing demand, including landscaping, is 50.5 AFY, with 3 AFY for the equestrian center and 3.74 AFY for system losses. The total demand excludes water needed to irrigate the pastures (the previous 1998 Final EIR and as indicated in Section 4.5 this Draft REIR reclaimed wastewater would be used to irrigate the pasture

The 1998 Final EIR estimates that about two-thirds of the production would occur between June and November and correspondingly one-third of the production would occur between December and May. The metered pumping rate currently at the site is approximately 99 to 110 AFY. According to Todd (2002), an average of 99.39 AF per water year was pumped from September Ranch wells between October 1998 and September 2001. From June 1998 to September 1998, 40.41 AF was pumped and 67.72 AF was pumped between October 2001 and July 2002. The average weekly pumping rate between June 1998 and July 2002 was 2.23 AF and the median was 2.49 AF. As a result, there would be a reduction of demand from the current pump rate of 99 AFY to an estimated proposed pump rate of 57.21 AFY at build-out. Yet it should be noted that while project implementation will result in a reduction in water demand of 41.79 AFY in relation to the current pump rate, project implementation will result in an increases demand of 54.21 AFY than the established baseline usage of 3 AFY.

In addition to assessing the project's water demands, to fully address the issue of the depletion or degradation of groundwater resources or the project's interference with groundwater recharge (in the form of a reduction in rejected recharge to the CVA), KJC examined the groundwater exchange between the SRA and the CVA.

Groundwater Exchange Between the SRA and the CVA

The following focuses on the hydraulic exchange of groundwater between the SRA and the CVA. As previously discussed, flow of groundwater (rejected recharge) is typically from the SRA towards the CVA for both average and below average rainfall periods. Groundwater flow from the CVA to the SRA is probably rare and would require specific combined conditions such as an aquifer test where a well in the SRA is pumped at a high flow rate aquifer test and a concurrent rainfall event (conditions met during the 1996/1997 aquifer test).

Based on available hydrogeologic data and the results of groundwater storage and recharge estimates presented by KJC and previously discussed within this section, the method of water balance presented below is the most reliable approach in estimating the degree of connectivity or groundwater exchange between the two aquifers. However, to provide further analysis and verification, a second evaluation of connectivity between the SRA and the CVA, the Darcy flux method, is also presented.

Water Balance

A water balance is the net groundwater storage resulting from the difference between recharge into the September Ranch basin and the expected water production and outflow or rejected groundwater from the September Ranch basin to the CVA. More specifically, a change in groundwater storage equals the inflow minus the outflow; thus the change in groundwater storage in the basin equals recharge to the September Ranch basin minus usage and runoff within that basin.

KJC performed an independent analysis of site-specific recharge based on rainfall data collected at the San Clemente Dam, as discussed previously within this section (see Table 4.3-2). The water balance analysis was performed for the extended drought years of 1988 through 1991 and for the average rainfall water years of 1996 and 1997. KJC notes that water balance calculations are based on recharge and outflow data and do not require actual water levels in the analysis. Yearly total inflow or recharge is distributed into four quarters or seasons and as discussed previously, it has been reduced to account for runoffs. The yearly outflow is the project demand of 57.21 AFY. Total flow than represents available groundwater in storage and flow between the SRA and the CVA given the right conditions.

As previously discussed, recharge to the basin is reduced to account for runoffs. Table 4.3-7 provides a summary of yearly total flow or change in storage in acre feet. The cumulative drawdowns are calculated as fall or rise of the water table per unit change in aquifer storage; values are carried over from one season to another in the course of a water year. The drawdown (negative signs) or water level rise (positive values) are based on a specific yield (S_y) of 0.33, derived from a Neumann solution of the 1992 Well C aquifer test data. The Neumann solution is used in unconfined aquifers (Kruseman and de Ridder 2000). Predicted changes for water levels are summarized Table 4.3-7.

Table 4.3-7: Predicted Water Level Changes in the September Ranch Aquifer

Average Rainfall Years	Inflow (AF)	Outflow (AF)	Total Flow (AF)	Cumulative Drawdown (ft)	Below Average Rainfall	Inflow (AF)	Projected Usage	Total Flow (AF)	Cumulative Drawdown (ft)
1996	262.1	-57.21	204.9	13.73	1987	65.5	-57.21	8.3	0.56
1997	244.0	-57.21	186.8	26.32	1988	65.9	-57.21	8.7	0.59
—	—	—	—	—	1989	76.4	-57.21	19.2	1.29
—	—	—	—	—	1990	78.0	-57.21	20.8	1.40
—	—	—	—	—	1991	81.9	-57.21	24.7	1.66
Source: Kennedy/Jenks Consultants December 2004.									

In either the average water year or below-average water years, the exceedance of natural recharge over use can have two effects: 1) potentially generates a net gain in storage or 2) excess groundwater as rejected flow into the CVA. The calculated cumulative water level increase suggests that

groundwater storage will not be depleted even in drought years. These estimates of water level increases are generally consistent with groundwater measurements taken in the field, meaning even in below average rainfall periods the water levels have not been observed to fall significantly. Therefore KJC suggests that the estimated water level increases and their consistency with field data serve as ground-truthing parameters for a water balance.

The total flow or net gain in storage in water years with average rainfall suggests that there is between 187 and 205 AFY of water that is available for exchange between the SRA and CVA (that is, to flow from the SRA to the CVA). In extended drought periods, there is approximately 8 to 25 AFY of available rejected flow for exchange. These two sets of storage results categorically suggest that in either normal or drought precipitation periods pumping the projected project demand from the SRA will not result in a reduction of groundwater storage volume in the CVA.

KJC concurs with the analysis presented in Todd (1992) and Todd (1997), that in average rainfall years and above average rainfall years the CVA and SRA would be in equilibrium, meaning that both aquifers would have insignificant net flow between them (Todd 1997). This is because the independent sources of recharge to both aquifers meeting or exceeding the water demand in both systems. KJC believes based on current calculations that this is valid for the project pumping scenario of 57.21 AFY where the amount of recharge is estimated to be between 244 and 262 AFY in average rainfall years and 65 to 81 AFY in below average years (see Table 1 in Appendix C of this Draft REIR), which still exceeds the project's estimated demand of 57.21 AFY and, as discussed below, the total demand of the SRA (57.90 AFY). Therefore, the effect of pumping in the September Ranch basin in average rainfall years does not impact the CVA significantly because recharge to the SRA exceeds groundwater usage in the September Ranch basin. The effect of pumping in the September Ranch on the CVA basin in drought years is also not considered to have a significant impact because recharge to the SRA is likely to remain an average of 73 AFY, well in excess of planned total usage of 57.90 AFY by all wells within the SRA.

Darcy Flux

The purpose of the following analysis is to present another method of calculating groundwater exchange between the two aquifers. The specific benefit in the following is to provide an independent check on the seasonal variability of limited groundwater exchange between the two aquifers. It is noted that the calculated volume of groundwater exchanged as Darcy Flux is less reliable in this situation than those presented above because of the uncertainty in the hydraulic conductivity value of 0.14 gal/day/ft^2 estimated for the Qoa_2 aquifer unit. Nonetheless, the reason for and the advantage in these flux calculations in this method is that they are dependent on the seasonal variability in groundwater levels; whereas, the above analysis only accounts for the difference between inflow and outflow, yearly seasonally. It is noted that the calculated volume of groundwater exchanged as Darcy Flux is less reliable in this situation than those presented above because of the uncertainty in the hydraulic conductivity value of 0.14 gal/day/ft^2 estimated for the Qoa_2 aquifer unit. Again, the purpose of this analysis is to independently check the relative variability in groundwater exchange between the two systems.

The hydrostratigraphic details of connectivity between the SRA and CVA was discussed previously in this section. The following focuses on the hydraulic exchange of groundwater between the two systems. As identified, flow of groundwater is typically from the SRA towards the CVA for both

average and below average rainfall periods. Groundwater flow from the CVA to the SRA is probably rare and would require specific combined conditions such as an aquifer test where a well in the SRA is pumped at a high flow rate aquifer test and a concurrent rainfall event (conditions met during the 1996/1997 aquifer test) (see Section 3.4.1 in Appendix C of this Draft REIR).

Calculations of the groundwater exchange based on Darcy flux (Freeze and Cherry 1987) is discussed below using the groundwater gradient information discussed in the previous section (see Table 5 of Appendix C for details and assumptions used for the Darcy calculations). The Dupuit formulation of Darcy flux (Fetter 1994) was used for the unconfined groundwater in the Qoa_1 water-bearing zone due to its variable gradients across the section M-M' (see Exhibit 4.3-4a through Exhibit 4.3-4c). Groundwater flux for the Qoa_2 was provided by Darcy's equation:

$$Q = K\ i\ A, \text{ where}$$

Q is the Darcy flux (AFY), K is the hydraulic conductivity of the water bearing material (gallons per day per square–foot), i is groundwater gradient (ft/ft) across the profile M-M', and A is the cross-sectional area of the profile M-M' (ft^2).

Hydraulic conductivity values (K) represent the degree of transmissiveness of groundwater in a particular permeable material. The K-values used in this study were derived by Todd (1997) from the 1996/1997 aquifer test. The pumping test yielded only the K-value for the Qoa_1 aquifer of 28.0 gal/day/ft^2. The K-value for the Qoa_2 was derived from a permeameter test of a single core, which yielded a value of 0.14 gal/day/ft^2. These values were used to calculate flow across the two systems.

The groundwater gradient (i) and cross-sections area (A) are dependent on the fluctuations in seasonal water levels. Table 4.3-8 is a summary of groundwater exchange rates in terms of Darcy flux between the SRA and CVA in acre-feet per quarter (AFQ).

Table 4.3-8: Groundwater Exchange Rates

Season / Quarter	Q (AFQ) for Qoa_1 Average Rainfall	Q (AFQ) for Qoa_2 Average Rainfall	Q (AFQ) for Qoa_1 Below Average Rainfall	Q (AFQ) for Qoa_2 Below Average Rainfall	Q (AFQ) for Qoa_1 Below Average Rainfall	Q (AFQ) for Qoa_2 Below Average Rainfall
	Water Year 1998	Water Year 1998	Water Year 1999	Water Year 1999	Water Year 1989	Water Year 1989
Fall	0.0	-0.0046	0.0	-0.0057	0.0	-0.0408[(a)]
Winter	-0.4995	-0.0213	-0.0566	-0.0077	—	—
Spring	-0.1026	-0.0108	-0.0180	-0.0070	—	—
Summer	-0.0257	-0.0074	0.0	-0.0136	—	—
Annual Total (AFY)	-0.6278	-0.0441	-0.0746	-0.034	—	—
Annual Total for Combined Qoa_1 and Qoa_2 (AFY)	—	-0.6719	—	-0.1085	—	-0.0408

Note: negative sign indicates groundwater flow from the SRA to the CVA. Q values are in acre-feet per quarter (AFQ).
[(a)] Well D was installed after 1989, so water level data is not available. Water levels and flux assumed constant for all four quarters.
Source: Kennedy/Jenks Consultants, December 2004.

These results suggest that exchange of groundwater between the two systems is greatest in the spring months, primarily through Qoa_1, with up to 0.4995 AF for three months. The least exchange occurs in the fall months.

Results of the Darcy calculations also suggest that the overall exchange of groundwater in the Qoa_2 is extremely small, with a maximum amount of 0.04 AFY in the average rainfall years. This low volume of exchange between the two systems can be attributed to the ridge of Qoa_2 separating the SRA and CVA and the low hydraulic conductivity of the Qoa_2. Groundwater must flow over the ridge of Qoa_2 or through it, thus; in either case, flow is both impeded and constricted moving between the SRA and CVA. This is supported by the Darcy results of no flow in Qoa_1 in the fall months. Specifically, groundwater levels in Qoa_1 must be higher than the top elevations of the Qoa_2 in the area of M-M' to achieve appreciable rejected flow to and from the CVA. In the fall months, storage is depleted and water levels (40 to 41 feet AMSL) fall one to two feet below the top of the Qoa_2, which is at approximately 43 feet AMSL. As a result, the Darcy flux through the Qoa_1 is zero for the fall months and summer months of water year 1999.

Due to the uncertainty in the hydraulic conductivity values for the Qoa_2, KJC believes this methodology is unreliable for estimating actual volume of groundwater exchange between the SRA and CVA based on calculations of Darcy flux. The Darcy estimates of exchange are on the order of 0.6 to 1 AFY which in the opinion of KJC is unrealistically minor. Therefore, KJC places greater confidence in the results of the water balance (groundwater exchange) between the two systems with the values stated above of 182 to 201 AFY. Therefore, while the project's demand of 57.21 AFY will reduce the recharge to the CVA it will not substantially deplete or degrade water resources and it can be accommodated by the resources available in the CVA without affecting senior water right holders (see Section 4.3.1 and the impact discussions below). Moreover, as also discussed in Section 4.9, Biological Resources of this Draft REIR, KJC concludes that impacts on biology can be a result of a prolonged or permanent decrease in baseflow due primarily to prolonged draught condition. Since a river baseflow is directly proportional to the amount of surface outflow and that the volume of surface outflow in the CVA is much larger than the amount of groundwater diverted for use by the project, it follows then there would be an insubstantial change in the baseflow of the Carmel River due to the relatively small amount of loss from project usage.

Less than Significant Impact – Use of Water in a Wasteful Manner: As identified in the thresholds of significance, the project is considered to have a significant impact if it is considered to use water in a useful manner. While this is not a CEQA standard identified in Appendix G of the CEQA Guidelines, the 1998 Final EIR addressed this issue; thus it will be addressed within this REIR.

The proposed project will result in the development of 94 market rate residential units and 15 inclusionary housing units that will utilize approximately 57.21 AFY of water. Conversely, the project site as it currently exists with 2 residential units, utilizes 99 AFY. Thus, in relation to current conditions, project implementation will provide greater housing opportunities while reducing onsite water usage by 41.79 AFY. This reduction is primarily achieved by irrigating pasture lands with treated wastewater rather than potable water. In addition, as discussed in Section 4.5 of this REIR, wastewater that is not reclaimed onsite may be conveyed to the Carmel Area Water District's (CAWD) water recycling plant for eventual release into the Carmel Valley Lagoon. Presently, during the summer and fall months the lagoon waters are at critically low levels, which jeopardize the

survival of the lagoon's steelhead populations. With additional wastewater flows, such as those from the project, CAWD will have a greater opportunity to and release more wastewater. Therefore, not only does the project reduce the water demand in relation to the existing demand levels, it also provides greater opportunity to allow for beneficial reuse. Therefore, the proposed project is not considered to use water in a wasteful manner. Affects upon increased pumping within the CVA and the sustainable yield of the SRA are discussed in greater detail below.

Less Than Significant Impact - Result in a Yield in the Groundwater System that is not Sufficient to Provide the Project Water Demand on a Long-Term Basis or During Droughts or Decreases the Availability of Groundwater to Existing Users of the Same Groundwater Basin: The project's sustainable yield is the amount of water that can be extracted from storage in the September Ranch basin without affecting other users with senior water rights on a long-term basis. KJC concludes, based on the estimated amount of yearly recharge, that a conservative estimate of groundwater available long term from the SRA during normal rainfall periods is about 244 to 262 AFY for all users within the SRA. These values (244 and 262) are primarily calculated based on the 70 percent ET loss over a 561-acre watershed for average rainfall periods. KJC also estimates that a conservative amount of 65 AFY to 81 AFY of groundwater is available for all wells within the SRA based on an 85 percent ET loss for extended below average rainfall periods. With the exception of SR1, wells within the SRA with production records are listed in Table 4.3-9.

Table 4.3-9: SRA Wells Production Levels

Other Production Wells Within the SRA	Production Rate (AFY)
Tarantino (Todd, 1997)	0.35
Campisi (Todd, 1997)	1.3
Spicher (Todd, 1997)	0.5
Steine (Todd, 1997)	0.5
Total Production Four Wells (MPWMD, 1993)	0.88
Total Production Four Wells (MPWMD, 1995)	0.79
Total Production Four Wells (MPWMD, 1996)	0.62
Average Total Usage	**0.76**
Source: Kennedy/Jenks Consultants, December 2004.	

The sustainable yield for the project is then the available amount of groundwater minus the usage of these four known domestic wells. The sustainable yield calculations are summarized in Table 4.3-10. below.

Table 4.3-10: Sustainable Yield Summary

	Available Groundwater in the SRA[1] (AFY)	Average Usage of Other SRA Users (AFY)	Project Sustainable Yield[2] (AFY)
Average Precipitation Period	244 - 262	0.76	243 - 261
Below Average Precipitation	65 - 81	0.76	64 - 80

Notes:
[1] Based on total recharge within the September Ranch watershed;
[2] Project sustainable yield is the amount of naturally available groundwater in SRA minus the current total usage by other SRA users.
Source: Kennedy/Jenks Consultants, December 2004.

As shown in Table 4.3-8, the estimated average amount for other SRA users is 0.76 AFY; with the inclusion of the project's demand of 57.21 AFY, the total groundwater demand for the SRA is 57.90 AFY. The estimated annual recharge in average rainfall years ranges from 244 to 262 AFY and in drought years ranges from 65 to 81 AFY. Subtracting the average use of other wells in the SRA from the recharge indicates the sustainable yield for the project in average rainfall years is 243 to 261 AFY and in drought years is 64 to 80 AFY. The estimated water use for the project at build-out is 57.21 AFY, and therefore, the project's water use is within the sustainable yield for the SRA including the project and other users.

The effect of pumping in the September Ranch basin in average rainfall years does not impact the CVA significantly because recharge to the SRA exceeds groundwater usage in the September Ranch basin. The effect of pumping in the September Ranch on the CVA basin in drought years is also not considered to have a significant impact because recharge to the SRA is likely to remain an average of 73 AFY, well in excess of planned total usage of 57.90 AFY by all wells within the SRA.

As discussed under 4.3.2, Overview of Conclusions Regarding Water Rights of September Ranch, based on the 45 year CVSIM simulation results provided, the water balance in AQ3 is such that the average difference between the inflow and the outflow is about 7,500 AFY. During the 1984 – 1991 dry period, the average difference between the inflow and the outflow in AQ3 is about 6,800 AFA. When compared to the approximately 2,705 AFA that is needed to meet the estimated maximum annual use in AQ3 described above, it appears that sufficient groundwater is available in storage in AQ3 on average as well as during a dry period to meet the needs of the riparian and pre-1914 appropriative rights holders in addition to the 57.21 AFY required to support the September Ranch project. Therefore, since there appears to be sufficient water in AQ3 with excess flow to meet the needs of the riparian and pre-1914 appropriate rights holders, pumping in the SRA will not have significant effect on water rights holders in AQ3. Moreover, the analogous analysis of the 45-year CVSIM simulation results provided for AQ4 indicates that the average difference between the inflow and the outflow is about 2,500 AFY. During the 1984 – 1991 dry period, the average difference between the inflow and the outflow in AQ4 is about 2,300 AFA. When compared to the approximately 1,845 AFA that is needed to meet the estimated maximum annual use in AQ4, it appears that sufficient groundwater is available in storage in AQ4 on average as well as during a dry period to meet the needs of the riparian and pre-1914 appropriative rights holders. Therefore, since there appears to be sufficient water in AQ4 with excess flow to meet the needs of the riparian and pre-1914 appropriate rights holders and there is sufficient supplies to meet the project's demands of 57.21 AFY, pumping in the SRA will not have significant effect on water rights holders in AQ4.

Hence, since there appears to be sufficient water on aggregate in AQ3 and AQ4 to meet the needs of the riparian and pre-1914 appropriate rights holders with and excess to meet the additional water demands of the SRA, the project will not have an effect on those water rights users. Moreover, potential spillage from the SRA is not needed to meet the maximum use in AQ3 and is likely to be part of excess outflow from AQ3 to AQ4. KJC concludes then any reduction in rejected flow (spillage) from the SRA will not have significant affect on the Carmel River and its underlying aquifer. This conclusion is further supported by the fact that actual use is often much lower than that cited for submittal to the SWRCB.

Less than Significant Impact - Increase in Pumping Demand on the Carmel Valley Aquifer: The above conclusions regarding sustainable yield centers of the finding that the September Ranch

basin is fairly isolated in terms of hydrogeology with limited exchange of groundwater between the SRA and CVA largely because of the approximate neutral gradient between them and the high ridge of relatively impermeable material. KJC has taken into consideration that the CVA AQ 3 collocates with the westernmost portion of the SRA west of the knoll. This portion of the CVA occupies about 35 percent of the total SRA aquifer and is the most productive portion of the SRA. Additional pumping wells would most likely be proposed in this area due to the presence of the relatively thick Qoa_1 water bearing unit, as compared to water bearing zones encountered elsewhere in the September Ranch basin.

Even with planned future additions of pumping wells in this portion of the SRA, and given that the project usage limit is 57.21 AFY, it is likely that the groundwater in the SRA and CVA would maintain similar water levels – i.e. near neutral gradient. There are two contributing factors to the sustained neutral gradient with project demand: 1) groundwater levels have always been slightly higher in the SRA than the downgradient CVA due to the SRA watershed's higher topography and hence flow towards the CVA; and 2) the relatively small usage in the SRA compared to the large amount of storage in AQ3 of the CVA.

The groundwater gradient between Well E in the SRA and the Brookdale Well in the CVA are typically around 0.0020 ft/ft, with flow towards the CVA. KJC concludes, based on the water balance, that it is unlikely that the proposed usage of groundwater in the SRA would induce further declines in water levels in neighboring wells.

The effect on the CVA water resources must also be assessed in terms of overall surface-water outflow from the CVA; more specifically as to this project, this Draft REIR must examine water coming out of AQ3 and AQ4. The amount of annual outflow as reported in the CVSIM model is an indicator of the Carmel River baseflow. The CVSIM model calculates baseflow whenever the storage capacities in AQ1 through AQ4 are exceeded. In the CVA, groundwater storage is normally exceeded during peak flow months from December through May. The baseflow then determines the amount of surface-water and groundwater (subsurface) outflows on a monthly basis in each of the CVA aquifer units.

The average surface outflows in normal precipitation years (e.g. 1996 and 1997) are 91,849 AF in AQ3 and 90,830 AF in AQ4 (CVSIM data). Surface outflows during below normal rainfall years (e.g. 1987 through 1991) are 7,530 AF in AQ3 and 6,149 AF in AQ4. The years 1987 through 1991 are considered as critically dry years when the groundwater storage in the CVA was recorded at its lowest volume since 1981 (see Table 3 in Appendix B of Appendix C of this Draft REIR). The driest year was 1990 with surface flows declining to 2,554 AF in AQ3 and 1,315 AF in AQ4. CVSIM data indicate that outflows in the CVA during the summer months of June through November 1990 are mostly of subsurface nature (i.e. groundwater) and which notably did not diminish as compared to normal rainfall years. Surface-water flow in 1990 did decline and its occurrence was restricted to the winter months from December through May, similar to normal rainfall periods.

Project design features are included in the project to ensure that any future pumping wells in the September Ranch basin should be located based on long-term pumping tests designed and executed appropriately to yield information on the radius of influence of potential multiple pumping wells. In addition, the project applicant will ensure that representative transmissivities for the three aquifer units (Qoa_1, Qoa_2, and Tm) will be made available for informed decisions on placement of future

wells so as to minimize their effects on neighboring wells (particularly in the westernmost project area where the two aquifers are in direct hydraulic contact). Moreover, prior to the issuance of permits for future groundwater pumping wells, as required, the County of Monterey will review and approve well site plans to ensure the insertion of new wells will not have an impact on nearby wells.

Thus, KJC concludes that a long term deficit of 57.21 AFY due to project demand in the SRA would not have a significant effect on the much larger volume of surface-water outflows in the CVA during normal and below average rainfall years.

Consistency with Relevant Plans and Polices

The following policies of the Carmel Valley Master Plan (CVMP) are applicable to the proposed project:

CVMP Policy 6.1.3: All beneficial uses of total water resources of Carmel Valley and its tributaries shall be considered and provided for in future planning decisions.

CVMP Policy 6.1.4: Pumping from the Carmel River aquifer shall be managed consistently with the Carmel River Management Program. Any drawdown of the aquifer, which threatens natural vegetation in the judgment of the Monterey Peninsula Water Management District or its successors, must be accompanied by a program of irrigation with the affected area.

CVMP Policy 26.1.22: Developed areas should be evaluated in light of resource constraints especially the water supply constraint addressed in Policy 54.17 (CV) and the character of each area. No further development in such areas shall be considered until a need is demonstrated through public hearings.

CVMP Policy 54.1.7: The County of Monterey supports the new San Clemente dam project or some other water project as a means of assuring an adequate supply of water for future growth in the Carmel Valley. Without additional supplies, development will be limited to vacant lots of record and approved projects. All development, which requires a water supply shall be subject to County adopted water allocation and/or ordinances applicable to the lands in the Carmel Valley Master Plan area. This is the Low Growth Alternative addressed in the Final SEIR 85-002.

Consistency Analysis: Consistent with the CVMP, the hydrogeologic reports prepared by KJC, considered the effects on the Carmel River surface and groundwater system and has included design features to insure impacts remain less than significant. The proposed project does not have a water authorization from the County of Monterey and no water is available for this project in the County's allocation. Rather, consistent with the CVMP, the proposed project will pump groundwater from the SRA for potable water needs. The September Ranch basin is isolated in terms of hydrogeology with limited exchange of groundwater between the SRA and CVA largely because of the approximate neutral gradient between the two systems. Even with planned future additions of pumping wells in this portion of the SRA and the project usage limit of 57.21 AFY, it is likely that the groundwater gradient between the SRA and CVA will maintain its near neutrality because of the relatively small usage in the SRA and the large amount of storage in the CVA available for underflow into the SRA. The effect of pumping in the September Ranch basin in average years will not affect the CVA significantly because recharge most likely exceeds usage. The effect of pumping in the September

Ranch basin in drought years on the CVA is also minimal because recharge will most likely exceed the planned usage of 57.21 AFY. Therefore, no impacts on natural vegetation would occur.

In accordance with the CVMP, the project will be the subject of public hearings by the Monterey County Subdivision Review Committee, the County Planning Commission, and the County Board of Supervisors.

4.4 Hydrology and Water Quality

This section presents the results of the preliminary drainage report prepared for the proposed project by Whitson Engineers (June 3, 1996). The study describes the approximate peak rates of discharge for the watersheds in the project site and recommends a drainage infrastructure to capture and discharge surface runoff. The report and a peer review provided by Monterey Bay Engineers for the previous FEIR (June 15, 1996) is incorporated by reference and is on file and available for public review at the Monterey County Planning and Building Inspection Department.

4.4.1 Environmental Setting

Watersheds

As shown on Exhibit 4.4-1, the primary drainage basins associated with this project are identified as watersheds A, B, C, D, and E. The terrain within these individual watersheds is predominantly hilly with slopes varying from 30 to above 50 percent. As one moves southward across the project site, the terrain becomes gentler and ultimately level as one approaches Carmel Valley Road.

Watershed A is comprised of approximately 202 acres of land. The total amount of land in the watershed is approximately 850 acres, most of which is located in Jacks Peak County Park to the north, and Del Mesa Carmel to the west. Drainage from Watershed A generally flows south through Roach Canyon, passing under Carmel Valley Road through a 36-inch corrugated metal pipe (CMP). This 36-inch pipe ultimately connects with a 48-inch storm drainpipe, which runs along Bonita Way through and extending to the Carmel River.

Watershed B is 136 acres in size and has two culverts, a 24-inch CMP and an 18-inch CMP, which provide for drainage under Carmel Valley Road. More specifically, storm water flows through the 24-inch CMP then along a ditch parallel to Carmel Valley Road extending to Canada Way. The 24-inch storm drainpipe continues along Canada Way, under Brookdale Drive, eventually daylighting into the Carmel River. Additionally, storm water flows through the 18-inch CMP under Carmel Valley Road and along a ditch parallel to Carmel Valley Road extending to Pancho Way. A 30-inch storm drain continues to carry the flow along Pancho Way, under Brookdale Drive, and to the Carmel River.

Watershed C is made up of approximately 230 acres. The upper reach of the watershed, 70 acres, is located outside of the project site, extending into Jacks Peak County Park and the Monterra subdivision. Currently, no storm drainpipes exist within this watershed to carry flow from the site, under Carmel Valley Road, to the Carmel River. Storm water that reaches Carmel Valley Road is diverted west along the roadside ditch to the 18-inch CMP located in Watershed B.

Watershed D contains approximately 67 acres. Storm water flows from this watershed drain beneath Carmel Valley Road, through an existing 36-inch CMP. This drainage extends through a 15-inch concrete pipe located along Brookdale Drive to Paseo Robles continuing through a 36-inch CMP along Brookdale Drive, under Glen Place, and through to the Carmel Valley River.

Watershed E is comprised of approximately 210 acres. It is part of a large 2,100-acre basin, which is located predominantly in the Monterra subdivision and the Canada Woods subdivision. Storm water runoff in this watershed flows south through Canada de la Segunda Canyon to Carmel Valley Road.

It then extends easterly along Carmel Valley Road to an 18-inch CMP under Carmel Valley Road, across agricultural land to the Carmel River. Drainage improvements that extend from Carmel Valley Road to the Carmel River, for this watershed, are part of the requirements for the adjacent Canada Woods subdivision.

Existing Hydrology

In agreement with the Monterey County Water Resources Agency, the preliminary drainage report utilized the Soil Conservation Service (SCS) TR-55 method for determining the stormwater runoff generated from the individual watersheds described above. The SCS TR-55 method takes into account many significant factors such as local precipitation patterns, basin area, length and slope of channel, configuration, ground cover, soil type, degree of urbanization, and most importantly, infiltration and runoff.

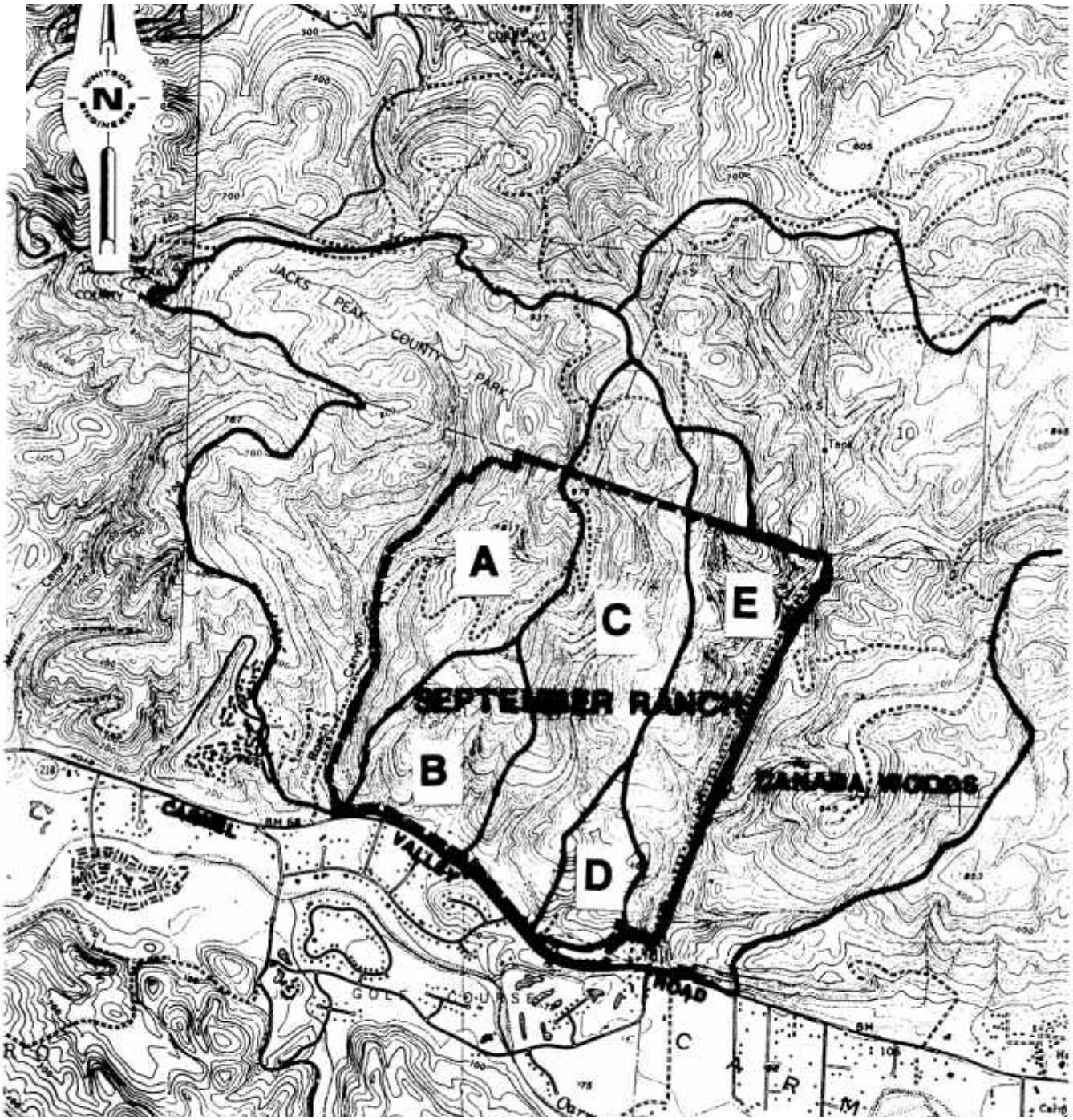
The estimated pre-development peak runoff flows for the respective watersheds were computed by Whitson Engineers as part of their preliminary drainage report and are provided in Table 4.4-1.

Table 4.4-1: Pre-Development Peak Storm Discharges

Location	Estimated Pre-Development Flows
Watershed A	Q_{10} = 3.0 cfs Q_{100} = 36.9 cfs
Watershed B	Q_{10} = 2.1 cfs Q_{100} = 31.1 cfs
Watershed C	Q_{10} = 4.0 cfs Q_{100} = 47.8 cfs
Watershed D	Q_{10} = 1.0 cfs Q_{100} = 16.0 cfs
Watershed E	Q_{10} = 2.9 cfs Q_{100} = 34.8 cfs
Q_{10} = estimated 10 year peak flow. Q_{100} = estimated 100 year peak flow. Source: Whitson Engineers, June 1996.	

Flooding

According to the CVMP EIR, substantial portions of the Carmel Valley lie within the 100-year flood plain of the Carmel River. During the past 50 years, several major floods have occurred along the Carmel Valley River. The largest of these floods was in March 1995, which caused extensive flooding near Highway 1 and Rio Road. The entire project is located within Zone C, defined as areas of minimal flooding, as shown on FEMA Flood Insurance Rate Map 060195-0185 D.



Source: Whitson Engineers, November 2004.

NORTH

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Michael Brandman Associates

Exhibit 4.4-1
Watershed Map

Water Quality

Surface Water Quality

The Federal Water Pollution Control Act, also referred to as the Clean Water Act (CWA), states that discharge of pollutants into waters of the United States from any points source is unlawful unless the discharge complies with the National Pollution Discharge Elimination System (NPDES) permit. Section 402(p) of the CWA establishes a framework for regulating municipal and industrial storm water discharges under the NPDES program. The NPDES program is administered by the California Regional Water Quality Control Board (RWQCB). Locally, the Central Coast RWQCB is responsible for determining the County's compliance with the water quality requirements of the CWA.

General Construction Activity Storm Water NPDES permits are issued for storm water discharges by the RWQCB. Construction activities that may be subject to this general permit include clearing, grading, and disturbances to the ground such as stockpiling or excavation that result in soil disturbances. Storm water pollution prevention plans are required for issuance of a construction NPDES permit and typically include both structural and non-structural Best Management Practices (BMPs) to reduce water quality impacts.

Groundwater Quality

Water samples were collected in 1991 from SR1 by Monterey Peninsula Water Management District (MPWMD) during pumping tests of the Old Hatton Well and in 1992 by the property owner of a new well referred to as SR1. These samples were subjected to analytical testing from general mineral, physical, and inorganic constituents.

Water from SR1 can be characterized as calcium-bicarbonate type water. The analytical data area is summarized in Table 4.4-2 and compared with the analytical results from three of Cal-Am's wells in the Carmel Valley; Cypress, Carlos, and Canada. Substantial chemical differences exist between the Cal-Am wells and SR1. Notably, iron and manganese concentrations are substantially greater in the Cal-Am wells than in SR1; calcium, chloride, alkalinity, and electrical conductivity (EC) are higher in SR1. Moreover, TDS, iron, and manganese exceed the federal and state drinking water standards of 500 parts per million (ppm), 0.30 ppm, and 0.05 ppm, respectively for SR1. Therefore, groundwater from the SR aquifer would need to be treated prior to distribution.

Table 4.4-2: Comparison of Water Quality Parameters

Parameter	SR1 (avg. of 3 samples)	Cal-Am Wells (avg. of 3 wells)
Calcium	159.00	111.00
Magnesium	38.00	34.00
Sodium	110.00	—
Potassium	5.00	—
Bicarbonate	424.00	—

Table 4.4-2 (Cont.): Comparison of Water Quality Parameters

Parameter	SR1 (avg. of 3 samples)	Cal-Am Wells (avg. of 3 wells)
Sulfate	198.00	—
Chloride	164.00	44.00
Hardness	552.00	—
Alkalinity	347.00	156.00
pH	7.60	6.90
EC	1,336.00	971.00
TDS	965.00	—
Nitrate	1.10	1.30
Iron	0.47	4.40
Manganese	0.36	0.67
Fluoride	0.73	—
All values in parts per million (ppm). Source: Todd Engineers, December 1992.		

4.4.2 Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant impact upon hydrology and water quality if:

- It causes increased runoff to exceed capacity of storm drain facilities or cause downstream or offsite drainage problems;
- It causes increased runoff to result in potential water quality degradation or lead to a significant increase in erosion and sedimentation;
- It will substantially degrades groundwater quality; or
- It will be constructed within a flood hazard zone.

Potentially Significant (Hydrology and Water Quality Impact 1) - Storm Water Runoff and Drainage: Implementation of the proposed project will result in the conversion of relatively undeveloped areas of the September Ranch site to residential uses. This transition of land use will result in previously pervious land being covered with impervious surfaces such as roads, driveways, and various structures (e.g., houses, patios, parking lots, etc.). Hence, the project is expected to modify the amount of runoff to existing drainage facilities, affecting the time it takes for runoff to peak or crest, potentially resulting in significant impacts to their operation. As expected, peaks in runoff will occur sooner under developed conditions compared with undeveloped conditions.

Source: Whitson Engineers, November 2004.

NORTH

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Michael Brandman Associates

Exhibit 4.4-2
Drainage Detention Basins

A comparison of peak storm water discharge between pre- and post-development conditions are summarized in Table 4.4-3.

Table 4.4-3: Comparison of Peak Storm Discharges

Location	Estimated Pre-Development Flows	Estimated post-Development Flows
Watershed A	Q_{10} = 3.0 cfs Q_{100} = 36.9 cfs	Q_{10} = 3.4 cfs Q_{100} = 43.7 cfs
Watershed B	Q_{10} = 2.1 cfs Q_{100} = 31.1 cfs	Q_{10} = 2.5 cfs Q_{100} = 36.6 cfs
Watershed C	Q_{10} = 4.0 cfs Q_{100} = 47.8 cfs	Q_{10} = 4.9 cfs Q_{100} = 53.4 cfs
Watershed D	Q_{10} = 1.0 cfs Q_{100} = 16.0 cfs	Q_{10} = 1.2 cfs Q_{100} = 18.3 cfs
Watershed E	Q_{10} = 2.9 cfs Q_{100} = 34.8 cfs	Q_{10} = 3.7 cfs Q_{100} = 38.8 cfs

Q_{10} = estimated 10 year peak flow
Q_{100} = estimated 100 year peak flow.
Source: Whitson Engineers, June 1996.

To reduce significant storm water impacts, the project will incorporate a series of potential basins (see Exhibit 4.4-2). Watershed A contains two proposed detention basins, one of which is proposed within the western portion of the site in Roach Canyon. The other basin is proposed to be located on the south side of the 15-unit inclusionary housing component of the project. The additional runoff to be generated in Watershed B is to be detained in two basins situated north of West September Ranch Road. Watershed C has one detention area proposed north of Ruby Crown Lane. Watershed D has two proposed basins, just north of Carmel Valley Road and Gooseberry Lane, respectively. In accordance with an agreement established by the project applicant, increased storm water runoff in Watershed E will be handled through additional capacity created by detention facilities constructed as part of the Canada Woods Subdivision.

All proposed detention facilities have been designed to effectively meet the additional runoff created during a 100-year storm event. According to design criteria provided by the Monterey County Water Resources Agency (MCWRA), the detention facilities shall be sized to store the difference between the 100-year post-development runoff and 10-year pre-development runoff while limiting discharge to the 10-year pre-development runoff rate. If runoff from individual lots cannot be directed to a detention basin, on-site retention or detention facilities shall be constructed in accordance with the requirements of the Water Resources Agency.

The preliminary size of the basins, as shown on Exhibit 4.4-2, is summarized in Table 4.4-4 below.

Table 4.4-4: Approximate Detention Requirements

Location	Approximate Detention Requirements
Watershed A	(43.7 - 3.0) cfs X 0.23 hrs. X 3600 sec/hr = 33,700 ft^3 = 0.77 acre-ft
Watershed B	(36.6 - 2.1) cfs X 0.14 hrs. X 3600 sec/hr = 17,388 ft^3 = 0.40 acre -ft
Watershed C	(53.4 - 4.0) cfs X 0.27 hrs. X 3600 sec/hr = 48,017 ft^3 = 1.10 acre-ft
Watershed D	(18.3 - 1.0) cfs X 0.12 hrs. X 3600 sec/hr = 7,474 ft^3 = 0.17 acre-ft
Watershed E	(38.8 - 2.9) cfs X 0.29 hrs. X 3600 sec/hr = 37,480 ft^3 = 0.86 acre-ft

Final design of the facilities is subject to the review and approval of the MCWRA and the MCPWD. Actual sizes of the detention basins will be field measured and submitted to the MCWRA to verify compliance with the required total volume.

Mitigation Measure

4.4-1: The proposed project shall include the construction, operation, and maintenance of detention basins to accommodate the 100-year storm event, with engineered design features to control release of detained flows to pre-development 10-year storm levels, as planned.

Implementation of this mitigation measure will reduce storm water runoff and drainage impacts to less than significant.

Monitoring Action

Prior to the issuance of a grading permit, the project applicant shall submit a drainage plan to the MCPWD and MCWRA for review and approval.

Potentially Significant (Hydrology and Water Quality Impact 2) - Short-Term Water Quality Construction Impacts: During grading and construction activities there will be the potential for surface water runoff to carry sediment and small quantities of pollutants into the storm water system, thereby potentially significantly degrading water quality. Typical pollutants that may be introduced into the storm drain system during this phase of the project include, but are not limited to, fertilizers from landscape management and petroleum hydrocarbons and heavy metals from construction vehicles. Storm water runoff will be transmitted via the storm drain system to the Carmel Valley River and ultimately to Monterey Bay.

Construction operations that result in an area of disturbance of one acre or more shall comply with the municipal NPDES permit and hence require the development and implementation of BMPs to control erosion and siltation and contaminated runoff from construction sites. The following are examples of BMPs that are typically included within the NPDES permit requirements:

- Use of sand bags and temporary desilting basins during project grading and construction during the rainy season to prevent discharge of sediment-laden runoff into storm water facilities;

- Installation of landscaping as soon as practicable after completion of grading to reduce sediment transport during storms;
- Hydroseeding of graded building pads if they are not built upon before the onset of the rainy season;
- Incorporation of structural BMPs (i.e., grease traps, debris screens, oil/water separators, etc.).

Additionally, prior to construction grading, the applicant will file a Notice of Intent (NOI) to comply with the General Permit and prepare a Storm Water Pollution Prevention Plan (SWPPP), which addresses measures that will be included in the project to minimize and control post-construction runoff. Moreover, project-grading plans will conform to the drainage and erosion control standards adopted by the County of Monterey and be subject to approval by the Public Works Department and Water Resources Agency. The following are examples of specific measures, or their equivalent, which will be implemented to prevent storm water pollution and minimize potential sedimentation during construction:

- Restricting grading to the dry season (April-October) or using BMPs for wet season erosion control;
- Damp sweeping;
- Using silt fences to retain sediment on the project site;
- Providing temporary cover of disturbed surfaces to help control erosion during construction; and
- Providing permanent cover to stabilize the disturbed surfaces after construction has been completed.

Compliance with the NPDES permit, County grading ordinances, and the SWPPP, will reduce short-term water quality impacts to levels that are considered less than significant.

Mitigation Measure

4.4-2: The project applicant shall prepare a drainage plan, which includes the proper design and placement of sediment traps to preen the discharge of sediments and pollutants into offsite drainage channels. In order to mitigate adverse water quality impacts that could be generated by the proposed project after construction, potential BMPs for storm water runoff quality control should be incorporated into project design. These could include such measures as vegetated buffer strips, use of porous pavement, "grass-phalt," cisterns of storm water storage, street sweeping, percolation basins and grease/oil traps (with regular maintenance programs.

Good housekeeping, waste containment, minimization of disturbed areas, stabilization of disturbed areas, the protection of slopes and channels, the control of the site perimeter, and the control of internal erosion are the objectives of the BMPs. The BMPs include limiting soil exposure through scheduling and preserving existing vegetation; stabilizing soils through seeding, planting, and mulching; diverting runoff through earth diking, temporary drains, swales, and slope drainage; reducing velocity through outlet protection, checking dams, slope roughening/terracing; trapping and filtering sediment

through silt fencing, straw bale barriers, sand bag barriers, brush and rock filters, storm drain inlet protection, and sediment basins. Specific and extensive BMP measures, such as those identified below, should be contained in the Final Erosion Control Report, which shall be submitted as a condition of the Final Map.

- Temporary erosion and sedimentation control features shall be maintained until revegetation is sufficient to prevent erosion of disturbed construction and restoration sites. Sufficiency of revegetation shall be determined by the project's conservation manager and certified erosion and sedimentation control specialists.
- Periodic pre-storm, storm, and post-storm monitoring inspections of BMP measures shall be conducted from the duration of construction phases and until temporary protection features have been removed.
- Daily inspections shall be conducted during grading construction to assure condition and adequacy of erosion and sedimentation control features.
- Daily repairs of damaged erosion- and sedimentation-control features (e.g., downed silt fencing, broken straw bales, damaged sandbags) shall be completed.

Implementation of this mitigation measure will reduce short-term water quality impacts to less than significant.

Monitoring Action

Prior to the issuance of a grading permit, the project applicant shall submit evidence of a General Construction Activity Storm Water Permit obtained from the RWQCB to the Monterey County Planning and Building Inspection Department.

Prior to the issuance of a grading permit, the project applicant shall submit a drainage plan to the MCPWD and MCWRA for review and approval.

Potentially Significant (Hydrology and Water Quality Impact 3) - Long-Term Water Quality Operational Impacts: Implementation of the proposed project will result in the generation of storm water runoff within the project site. This storm water will transport an elevated level of surface contaminants, such as accumulated particulate matter (dust), residuals from automobile use (hydrocarbons, heavy metal from tire and brake wear), and organic matter from roof tops, roadways, landscaped areas, parking lots, and other exposed surfaces not the storm drain system. These contaminants would eventually enter down stream areas and wetlands, leading to a potential degradation of aquatic and upland habitat. Therefore, the proposed project would result in significant long-term water quality impacts.

It is known that a significant amount of runoff occurs during the first rainfall event of each year (typically called first flush). BMPs that are focused on reducing the volume of runoff contaminants that are cored by storm water are the most effective means of reducing water quality impacts of the proposed project. As part of the mitigation for post-construction runoff impacts addressed in the SWPPP, individual components of the project will implement regular maintenance activities (i.e., damp sweeping, cleaning storm water inlets, controlling litter, etc.) at the site to prevent soil, grease, and litter from accumulating on the project site and contaminating surface runoff. Measures such as

storm drain inlet filters, oil/water filters, fossil filters, or vegetative swales will be used to limit contamination of surface runoff.

Mitigation Measure

4.4-3: The applicant shall prepare CC&Rs, which include requirements for the type and frequency of catch basin, sediment trap, and storm water inlet cleaning and maintenance. The storm drainage system shall be maintained on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the down stream conveyance system, and maintain the catch basins sediment trapping capacity. The homeowner's association, or some other similar responsible entity, shall provide for at least an annual inspection regimen and immediately repair or clean the system, as needed.

Implementation of this mitigation measure will reduce long-term watery quality impacts to less than significant.

Monitoring Actions

Prior to the issuance of a grading permit, the project applicant shall submit evidence of a General Construction Activity Storm Water Permit obtained from the RWQCB to the Monterey County Planning and Building Inspection Department.

Prior to the issuance of a grading permit, the project applicant shall submit a drainage plan to the MCPWD and MCWRA for review and approval.

Consistency with Relevant Plans and Policies

The following policies of the Carmel Valley Master Plan (CVMP) are applicable to the proposed project:

CVMP Policy 3.1.1.2: As part of the building permit process, the erosion control plan shall include the following elements:

- Provision for keeping all sediment onsite;
- Provision for slow release of runoff water so that the runoff rates after development do not exceed rates prevailing before development;
- Revegetation measures that provide both temporary and permanent cover;
- Map showing drainage for the site, including that coming onto and flowing off the property; and
- Storm drain facilities shall be designed to accommodate runoff from 10-year or 100-year storms as recommended by the MCWRA.

CVMP Policy 3.1.1.3: All exposed areas within development projects subject to erosion and not involved in construction operations shall be protected by mulching or other means during the rainy season (October 15-April 15).

CVMP Policy 3.1.5: The amount of land cleared at any one time shall be limited to the area that can be developed during one construction season. This prevents unnecessary exposure of large areas of soil during the rainy season.

CVMP Policy 3.1.7: The combination of generally steep slopes and often thin and erosive soils will present a definite potential for erosion and siltation which may have an adverse effect both on and offsite. Development shall therefore be carefully located and designed with this hazard in mind.

CVMP Policy 3.1.8: The native vegetative cover must be maintained on areas prone to rapid runoff as defined in the Soil Survey of Monterey County. These include the following soils:

a. Santa Lucia shaly clay loam, 30%-%50 slope (SfF)w
b. Santa Lucia-Reliz Association, 30%-75% slope (Sg)
c. Cieneba fine gravelly sandy loam, 30%-70% slope (CcG)
d. San Andreas fine sandy loam, 30%-75% slope (ScG)
e. Sheridan coarse sandy loam, 30%-75% slope (SoG)
f. Junipero-Sur complex, 50%-85% slope (Jc)

CVMP Policy 3.1.9: A condition of approval requiring ongoing maintenance of erosion control measures identified in the erosion control plan shall be attached to all permits allowing development in areas prone to slope failure including, but not limited to, the following:

- All development in areas classified as highly susceptible to slope failure;
- All development on sites with slopes of greater than 20%; and
- Where roadways are cut across slopes greater than 30%, or across slopes with thin and highly erosive soils.

CVMP Policy 3.1.11: Development of onsite retention and infiltration basins is encouraged in groundwater recharge areas subject to approval be the Monterey Peninsula Water Management District, the County Health Department, the MCWRA, and the County Surveyor.

CVMP Policy 3.1.13: The installation of appropriately sited stream stabilization structures and detention basins shall be required for new development.

CVMP Policy 3.1.15: An erosion control plan shall be required for all discretionary development permits and all submittals for areas having a high or extreme erosion hazard prior to accepting such applications as complete.

CVMP Policy 3.2.3.1: Due to the highly erosive qualities of local soils and the fragileness of the native vegetation, livestock (i.e., horses, cattle, goats, etc.) shall not be permitted in proposed developments unless a livestock management plan is first approved.

CVMP Policy 35.1.3: Development shall be so designed that additional runoff, additional erosion or additional sedimentation will not occur off the development site. Storm drain facilities shall be designed to accommodate runoff from the 10-year or 100-year storms as recommended by the MCWRA.

Consistency Analysis: In accordance with the CVMP, the applicant proposes to comply with all applicable regulations concerning stormwater runoff and erosion control and has submitted a preliminary drainage control plan subject to review and approval the MCWRA and Monterey County Public Works Department (MCPWD). This plan includes erosion control measures to address onsite soils such as Santa Lucia Clay Loam (SfF) and Santa Lucia-Reliz Association (Sg), which are prone to rapid runoff. The plan also includes the applicant's request for a variance from subdivision ordinance requirements that prohibit development on slopes greater than 30 percent in order to allow flexibility in the siting of roads.

The preliminary drainage plan also identified stormwater detention basins, which are subject to the review and approval of the MCWRA and MCPWD. To ensure further consistency with the CVMP, the applicant will be required to obtain an NPDES permit from the RWQCB, which details erosion control measures to be undertaken during construction and operation of the proposed project.

4.5 Wastewater Treatment and Disposal

This section summarizes the findings of the October 2003 Wastewater Treatment and Disposal Report prepared for the September Ranch Subdivision project by Kennedy/Jenks Consultants (KJC) and the Wastewater Feasibility Study prepared by Questa Engineering Corporation (July 1995). These reports describe the project's proposed onsite wastewater treatment plant (WTP) and the WTP's adequacy for collecting, treating, and disposing of wastewater, including an examination of the proposed water demand and runoff from the project. In addition, as an alternative to the onsite WTP, the reports analyze the feasibility of the project connecting to Carmel Area Wastewater District (CAWD) facilities; nevertheless, either alternative will require an onsite collection system.

4.5.1 Environmental Setting

Currently, the site is largely undeveloped; however, an equestrian facility with associated employee housing presently exists on the southern portion of the property, adjacent to Carmel Valley Road. The existing wastewater flows are minimal and are treated and disposed of through the onsite septic system. Questa Engineering estimated that the existing wastewater flows from the equestrian facility are 450 gallons per day (gpd).[1]

Nitrate Loading

One of the critical water quality concerns in the Carmel Valley, as well as throughout other areas of Monterey County is the concentration of nitrate in the groundwater. Since the Carmel Valley groundwater basin serves as a primary source of water supply for most of the Monterey Peninsula, nitrate effects from sewage disposal are a concern within the project area.

Sewage disposal to land along with livestock wastes and fertilizer applications on cropland and potentially golf courses are the principle sources of nitrate that affect groundwater in Carmel Valley. In order to assure protection of groundwater resources against affects from sewage disposal, Monterey County authorized the Carmel Valley Wastewater Study. As a result of this study, the maximum wastewater loading rates (from septic systems) to regulate groundwater nitrate concentrations was established at 30 milligrams per liter (mg/l).

The study divided the Carmel Valley into forty-eight hydrologic sub-basins to simplify the accounting of nitrate loads and projected effects on water quality. Within each sub-basin, geographical areas were defined based on soil, hydrologic, and topographic features and recommended maximum wastewater nitrate loading rates expressed in gpd were assigned. The assigned loading rates vary from 80 to 300 gpd per acre. These are understood to represent the subsurface discharge of septic tank effluent, with a corresponding total nitrogen concentration averaging 40 mg/l. The allowable daily discharge rates (in gpd) multiplied by the assumed total nitrogen concentration of the final effluent (mg/l), thus yields the allowable mass loading of nitrate in each geographical area and sub-basin.

The September Ranch project area spans two of the hydrologic sub-basins (sub-basins 35 and 36) outlined in the wastewater study. Sub-basins 35 and 36 are hydrologically contiguous; thus, the total

[1] This is based upon a factor of 25 visitors per day at a rate of 10 gpd per person and 2 employees at a rate of 100 gpd per employee, for a total of 450 gpd.

nitrate loading can be transferred between the two sub-basins. According to the wastewater study criteria, in 1995, Questa Engineering calculated the allowable nitrate loading for the project area as approximately 13,463 grams per day.

In addition to the Carmel Valley nitrate loading criteria, region-wide the site-specific nitrate criteria of the Regional Water Quality Control Board (RWQCB) Central Coast Region's basin plan specifies maximum nitrogen loading of 40 grams per acre per day. In establishing final waste discharge requirements, the RWQCB also examines the localized nitrates on groundwater quality from a central wastewater treatment and disposal facilities to assure prevent adverse impacts to drinking water supplies. Given that the site is comprised of 891 acres, the site has a maximum allowable nitrate loading of approximately 36,000 grams per day. The existing livestock operations at the project site produce 4,038 grams per day of nitrate loading.

Wastewater Storage

Wastewater storage requirements are set forth by both State and County regulations. Provisions for short-term emergency storage of incoming wastewater at a treatment plant are normally provided by a small holding tank or pond. Title 22 of the California Code of Regulations (CCR) requires a minimum of 24-hour storage; whereas, the County of Monterey has a 3-day storage requirement.

Long-term storage is also required at treatment facilities for the containment of treated wastewater during wet periods or other time when irrigation is not needed or is not possible. Title 22 of the CCR requires a minimum of 20 days of long-term storage. The County of Monterey requires a minimum of 120 days of long-term storage. Long-term wastewater storage may be provided in ponds, reservoirs, or by alternate disposal methods, including percolation systems.

Wastewater Spray Disposal

Requirements for wastewater spray disposal are primarily established by the RWQCB with input from the County Health Department. Spray facilities are permitted upon evidence of adequate terrains, soils, and groundwater percolation conditions that assure absorptions of the applied effluent by the soils and plants. There are no specific soil depth or percolation standards that apply to spray disposal, since spray disposal is confined to the irrigation season when essentially all of the wastewater will be absorbed and used by vegetation. County requirements pertaining to spray disposal include: 1 acre for each 10,000 gpd of disposal; 1 acre for standby; a 200-foot setback from existing wells; and 50-foot setbacks from property lines.

Carmel Area Wastewater District

The Carmel Area Wastewater District (CAWD) provides wastewater services to the project area. An 8-inch pipeline serving Del Mesa Carmel and Pacific Meadows crosses Carmel Valley Road at Via Petra. The existing pipeline runs south along Via Petra, turns west, crosses Via Mallorca, and continues across the Rancho Canada Golf Course. The pipeline travels south of Carmel Middle School, then along Rio Road across Highway 1 and eventually under the Carmel River to the sewage treatment plant. The size of the pipeline increases at various locations, reaching 27 inches in diameter at the treatment plant. The only pump station along this route is the influent pump at the treatment plant. The CAWD treatment plant has a permitted average dry weather treatment capacity of 3.0 million gallons per day (mgd).

The CAWD facility is a tertiary plant that during the dry season provides reclaimed water for landscape irrigation and during the wet season, when irrigation demand is low, the treated effluent is discharged into the Pacific Ocean via an existing permitted outfall.

4.5.2 Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant wastewater treatment and disposal impact if:

- Sewage treatment and disposal do not conform to the standards and guidelines established by local, regional, and state regulatory agencies; or
- Substantially contributes to groundwater contamination.

Potentially Significant (Wastewater Treatment and Disposal Impact 1) – Construction and Operation of Onsite Treatment Plant and Onsite Disposal of Treated Water: Wastewater flows must also account for infiltration and inflow into the sewage collection system during the wet season. This can vary widely depending on the type, size, and length of sewer lines, the materials of the installation system, and the local rainfall and drainage conditions. Infiltration and inflow are typically highest in low-lying, high rainfall areas, where conventional gravity sewers are used. The project intends to use small diameter effluent sewers, which have glued watertight joints and very little possibility for extraneous water to enter the sewer lines. The only areas potentially vulnerable to infiltration and inflow will be the septic tanks and pump chambers at the individual residences and at the inclusionary housing. If the tanks are properly installed, the system should be free of infiltration and inflow.

The proposed facilities include collection pipelines, small capacity WTP facility, possible outfall interceptor to a public sewer, and an onsite spray disposal system or, alternatively, a subsurface disposal system (leachfields) that will indirectly return the treated water to the groundwater system. The WTP facility will include a three-day storage basin and a 120-day (14 acre-feet) wet weather storage facility. In addition, the proposed collection system will have pumping stations, each with a one-day storage capacity.

Table 4.5-1 identifies the projected wastewater flows. Wastewater generation rates are typically estimated to be greater than actual flows to ensure adequate design capacity. Using conservative estimates, the total wastewater flow of the proposed project is 32,400 gallons per day (gpd) for average dry weather flow. The total is based upon 300 gpd for the single-family residential units, 250 gpd for the inclusionary housing units, and 450 gpd for the equestrian facilities. For design purposes, a peak daily flow is estimated to be 25 to 30 percent greater than the average daily flow; thus, the peak daily flow is estimated to be 42,120 gpd under a worst case scenario.

Table 4.5-1: Projected Wastewater Flows

Source	Units	Generation Rate (gallons/day/unit)	Total (gallons/day)
Single Family Residential Housing	94	300	28,200
Inclusionary Housing	15	250	3,750
Equestrian Facility	—	450	450
Total Design Flow	—	—	32,400
Estimated Peak Flow	—	—	42,120
Source: Questa Engineering, July 1995			

As indicated in Table 4.5-1, the proposed project is estimated to result in 32,400 gpd of wastewater, which will require treatment and disposal. Regardless if wastewater is treated and disposed of on or offsite, the project will require an onsite collection system. The onsite collection system will be comprised of a septic tank effluent pump (STEP) system that consists of relatively shallow gravity pipelines, force mains, and collection sumps that serve one or more residences. Each house or building (inclusionary housing) will have a septic tank where sedimentation occurs. The effluent is then transported to the main collection system comprising a network of small diameter pipes. The collection system will convey all septic tank effluent to the central treatment plant in the southwest portion of the property. The treatment plant will provide tertiary level final treatment that meets the strictest standards of Title 22 of the CCR. Specifically, the onsite treatment will include primary treatment, which occurs in septic tanks, biological secondary treatment including nitrification and dentrification, secondary clarification, and tertiary filtration. Wet weather storage of treated effluent will be within a lined reservoir located at the former quarry site. As previously noted, there are two alternatives for the disposal of the final effluent, either via spray irrigation or via subsurface disposal. The first alternative includes the disposal of final effluent via spray irrigation of pasture land and recycling for residential landscape watering (drip and spray irrigation). Surface irrigation will be applied on a seasonal basis that limits percolation no deeper than can be completely absorbed by vegetation for evaporation and evapotranspiration. The second alternative includes the disposal of the final effluent via leachfields, which will indirectly release the treated water into the groundwater system. The benefit of this approach is that it will reduce the net draw upon the water resources of the Carmel Valley aquifer.

The key components of the onsite wastewater collection, treatment, and disposal system are described below:

- **On-Lot Septic Tanks.** On-lot septic tanks will provide the primary treatment function. The sizing of septic tanks for residential and commercial buildings is set forth in Monterey County Code Chapter 15.20. Each residence or building will have one septic tank for primary treatment (sedimentation).
- **Collection System.** The collection system is proposed to follow the road network as closely as possible. The plastic piping for the collection system will range in size from 1½ to 4-inch diameter. The collection system will have two main branches, generally following the two ridges that encompass most of the residential building sites. The eastern branch will convey effluent by gravity to the treatment plant. The western branch will require a pump station to be near the equestrian center. The western branch will also collect wastewater from the multi-

family housing and the equestrian center, each of which will also have septic tanks and a pump system to pump into the west branch collection line.

- **Central Treatment Plant.** The treatment plant is proposed to be a fully-enclosed proprietary "package" system that will be modified, as needed, to suit the specific requirements of the project. Selection of the specific treatment plan design/manufacturer will be done following project approval when all discharge specifications and other requirements are completed. Regardless of the manufacturer, the treatment system will consist of below-ground, built in place concrete vaults for sedimentation and clarification; oxidation process for secondary treatment; coagulation and sand filtration; supplemental disinfection system.

The treatment plant will be designed for continuous performance with contingency provisions in case of component malfunction. All critical mechanical components in the process will have duplex or redundant units to allow bypass for routine maintenance and repair while maintaining full compliance with effluent discharge specifications.

Stand-by power will be provided along with a fully automated control system. In the event of a power failure, the stand-by power unit will automatically start and provide power to all treatment units. The facility will be entirely enclosed for security reasons and to prevent the release of odors. All gases generated during the treatment process will be confined below the floor deck and will be deodorized prior to discharge. A plant control system will be provided to monitor status and performance of the equipment and instrumentation utilized in the treatment processes.

- **Wastewater Storage.** Wastewater storage capability is needed for two purposes: short-term emergency storage and long-term storage. Short-term emergency storage is needed as a contingency in case of malfunction in the treatment process. Short-term emergency storage for up to three days of peak flow will be provided by a small storage pond (or tanks) located immediately alongside the treatment plant. It will have a capacity of approximately 125,000 gallons, which equates to a reservoir of about 1,700 square feet in surface area by ten feet deep, or below-ground storage tank of equivalent volume. The emergency storage pond would be lined and equipped with a sump pump to route the wastewater back into the treatment plant following the emergency outage. For the proposed project, this would amount to approximately 125,000 gallons at peak flow.

Long-term storage of treated wastewater during the wet season will be provided by a storage reservoir located in the former quarry site in the southeastern area of the site. The quarry site is an existing excavated area covering roughly one acre with an average excavated depth of about 20 to 25 feet. The quarry walls are steep to near vertical, and the site is ideal for establishing a wastewater storage pond. In order to be used for wastewater storage additional excavation of rock will be required, and the pond will need to be lined with a clay, plastic, or gunite liner to prevent leakage.

The final size of the pond to satisfy the 120-day storage requirement will be established during final facilities design. Water balance calculations show that the required storage pond would be roughly 25 feet deep (at capacity), with a one-to-one sidewall slope and overall maximum water surface area of 30,000 square feet. The storage volume would be approximately 14 acre-feet.

- **Disposal (Spray Irrigation).** Treated wastewater will be entirely disposed of by spray irrigation of onsite pasture and a combination of drip and spray irrigation of landscape areas within the project site. The areas planned for irrigation include: a) the existing horse pasture

fronting Carmel Valley Road; and b) landscaping at approximately 25 of the individual residences along the eastern ridge above the treatment plant, plus common landscaped areas at the multi-family residential complex. The estimated number of residences to be supplied with reclaimed water is dependant on the volume of reclaimed water available.

- **Disposal (Leachfields).** An investigation of the suitability and capacity of the project site for leachfield disposal systems was conducted in 1981 by Storm Engineering. Questa Engineering reviewed the findings of the Storm Engineering report in the context of the current project and project alternatives and in conjunction with the additional soils, geology, and groundwater information that has been prepared since 1981. Questa Engineering concluded that there are a sufficient number of areas having suitable conditions and adequate capacity for subsurface disposal. Questa Engineering made the following recommendations, which will be incorporated into the September Ranch project in the event that the subsurface disposal system is implemented:
    - Main Leachfield – Dual 200 percent leachfield system located in the Front Terrace (pasture area) area of the site; one of the two fields is proposed to be located in the western portion of the property, near the equestrian facility and the other field will be located immediately east of the entrance gate near the treatment plant site.
    - Reserve Area – A designated 100 percent reserve leachfield area. Depending upon final soils/percolation testing and the ultimate size of the project, the location for the reserve area may be either in the Front Terrace area or in one or more of the identified leachfield sites in the West Side Canyon.
    - Design Details – Final design, sizing, and layout of the leachfield system will be based on additional soil profiles and percolation testing in conjunction with site development plans for the project. The disposal recharge areas have been selected because of their hydraulic connectivity to the Carmel Valley alluvium and to avoid wooded areas as much as possible. The leachfield system will be designed to minimize losses of evapotranspiration. This alternative will provide a groundwater recharge-recycling benefit. However, because the system will be planned to conform with the RWQCB policies for subsurface disposal, it will not necessarily be classified as a wastewater recycling or reclamation project for permitting purposes. To be conservative for water balance calculations, Questa Engineering concludes that it is reasonable to assume that 90 percent of the wastewater design flow will ultimately be returned to the aquifer via the leachfield system and the remaining 10 percent will be lost to evapotranspiration or other incidental losses. Thus, the subsurface disposal alternative will substantially reduce the net demand on groundwater resources as compared to the spray irrigation plan.

Based on the estimated volume of treated wastewater from the project, approximately 13 acres on the site could be irrigated. The irrigation season is roughly eight-months (April through November). The calculations are based solely on the evapotranspiration required for irrigated pasture, and assume a negligible loss of water to percolate. The wastewater/irrigation rate varies monthly, according to the climate and the plant requirements. The average wastewater/irrigation application rate over the 245-day irrigation season would be 0.095 gallons per day per square foot (gal/day/ft). Higher irrigation rates and a smaller amount of disposal area would be required if percolation into the soil were to be included in the irrigation/disposal design. The soils in the pasture area are well-drained and could withstand higher irrigation rates in excess of the evapotranspiration requirements. The additional water would not benefit the pasture, but it would be recharged to the ground water.

The total volume of reclaimed water to be used for irrigation from April to November includes the daily wastewater flow during the irrigation season, plus all wastewater and rainfall collected in the storage reservoir during the winter months. The total volume is estimated to be about 39.4 acre-feet in a wet year and 38.9 acre-feet under average rainfall conditions. However, under drought conditions, the total volume of reclaimed water from the system would drop as consumption drops through voluntary reductions or through required reductions mandated from the Monterey Peninsula Water Management District (MPWMD).

Sanitation District. The County presently operates several districts with small tertiary treatment plants in Carmel Valley staffed by the Monterey County Public Works Department. The wastewater facilities for the project were originally proposed to be incorporated into a County Sanitation district (CSA) for operation and maintenance; however, according to the County of Monterey Public Works Department, the County no longer has an interest in operating tertiary treatment plants; thus that option is no longer viable. The applicant will be required to form a Public Utilities Commission (PUC) regulated company or have the package plant operated by a regional agency.

Maintenance of the STEP collection system will require on-lot inspections of septic tanks and individual pump systems to check for solids build-up in tanks, and proper functioning of pumps and controls. These inspections can be carried out either by county Public Works maintenance staff or by a contractor. In case of individual pump failure, it is anticipated that the property owner would make the necessary repairs.

Operation and maintenance of the treatment plant consist of visual checks of treatment processes for problems, performance of preventive maintenance on equipment replenishing chemical supplies, repair of any malfunctioning equipment, sample taking, general housekeeping and monthly report preparation. These tasks would be carried out by a certified plant operator.

The spray disposal operations are proposed to be managed under contract to the County. The County would be responsible for facilities up to the irrigation main line. The contract operator of the equestrian facilities would be responsible for managing the irrigation system for the pasture. Maintenance of the reclaimed water system serving the private residences would be provided by a contractor through the homeowners' association.

Mitigation Measures

4.5-1: The applicant shall form a PUC regulated company or request that the package plant be operated by a regional agency.

4.5-2: Prohibit the discharge of toxic substances or substances that will adversely affect the collection, treatment, or disposal of wastewater.

4.5-3: Submit a final operations plan subject to the review and approval of the Director of Environmental Health for the operation of the reclaimed water storage reservoir to ensure the protection of public health and the environment. At a minimum, the final plan shall include provisions for disclosing the proper operations and maintenance of the STEP systems to homeowners, proper maintenance and operations of the reclaimed water system subject to common ownership and the parties responsible for such maintenance.

4.5-4: The wastewater storage pond shall be fenced and secured against entry by anyone other than the operators of the system. The fencing shall be designed and installed so that it is not visible from Carmel Valley Road or project residences.

Implementation of the mitigation measures would reduce onsite treatment and disposal impacts to less than significant levels.

Monitoring Action

Prior to the issuance of a building permit, the applicant shall submit a wastewater treatment plant operation plan that includes safety prevention measures to the Director of the Planning, Monterey County Planning and Building Inspection Department for review and approval.

Less than Significant Impact – Collection and Transmission of Project-Generated Wastewater to Offsite Treatment Plant: In the event that the project does not include the construction and operation of an onsite WTP, wastewater flows generated by the project will have to be handled by the CAWD. Under this scenario, the project will include the STEP collection system. Specifically the STEP system will be installed to convey effluent from individual residences via a force main, which will discharge into the CAWD collection system. The onsite collection system will connect with the CAWD system within the approximate area of Via Petra and Carmel Valley Road, from which wastewater will flow by gravity to the CAWD treatment plant. The pumped flows from the project are dependent upon the design parameters of the project's onsite pumping station, including expected inflow, pump size, holding capacity of the pump station, and the size and length of the force main. It is anticipated that the peak inflow rate of the pump station will be 75 gallons per minute (gpm).

The critical segment of the CAWD collection system, which will serve the project, is an 8-inch pipeline that extends from Via Petra to Via Mallorca within the project area. A measurement of the average slopes and depth of flows during peak flows indicate that the existing 8-inch pipe is less than half-full during peak flow; thus, there is adequate capacity in the CAWD collection and distribution system.

According to KJC, the CAWD currently has a 3.0 million gallon per day (mgd) tertiary facility that is operating sufficiently below its capacity; as such, the addition of 0.04 mgd (32,400 gpd) from the September Ranch project is not considered to be significant.

Moreover, according to CAWD, the project's connection to the CAWD presents the opportunity to create environmental benefits.[2] Specifically, CAWD is in the process of developing Phase II of their recycling project, which will allow CAWD to increase the quantity of wastewater that is treated and returned to the environment as recycled tertiary treated water. CAWD anticipates that after meeting contractual agreements, some tertiary treated water will be available to augment the freshwater flow to the Carmel Valley Lagoon. Presently, during the summer and fall months, the quantity of water in the lagoon can reach critically low levels, which jeopardizes the steelhead populations that live within the lagoon. With additional wastewater flows, such as those from the project, CAWD will have a greater opportunity to treat more wastewater and thereby, meet and exceed the amount needed for its contractual agreements, thus providing tertiary treated flow to the lagoon. Additionally, it is the goal of CAWD to eliminate all wastewater outfall to the ocean through the recycled water project, which

[2] Personal communication, Ray von Dohren, General Manager, CAWD, April 15, 2004.

will further benefit ocean water quality and the riparian habitat of the lagoon. Hence, given the feasibility of connecting to CAWD facilities, CAWD's available capacity, and the environmental benefits associated with the CAWD alternative, this alternative is considered the preferred wastewater alternative.

Less than Significant Impact - Nitrate Loading: Sewer disposal to land, along with livestock wastes and fertilizer applications on cropland (and potentially golf courses) are the principle sources of nitrate that affect groundwater in Carmel Valley. As discussed previously, a wastewater study was conducted to identify the allocation of allowable nitrate loadings within the Carmel Valley planning area. According to the study, the allowable nitrate loading for the project area is approximately 13,462 grams per day. Moreover, the RWQCB has established a region-wide maximum nitrate loading of 40 grams per acre per day, which equates to approximately 36,000 grams per day of nitrate loading for the project site. Questa Engineering prepared a nitrate loading assessment for the proposed project. The nitrate loading from the proposed onsite WTP and disposal system is estimated to be 391 grams per day, which constitutes 2.9 percent of the allowable loading under the Carmel Valley Wastewater Study and 1.1 percent of the allowable loading under the RWQCB criteria. Thus, considering the existing livestock operation, which produces 4,038 grams per day of nitrate loading, the site will have a total nitrate loading of 4,429 grams per day, which constitutes 33 percent of the allowable nitrate loading under the Carmel Valley Wastewater Study and 12 percent of the allowable nitrate loading under the RWQCB criteria. Therefore, the proposed project is within the established nitrate loading parameters and thus is considered to have a less than significant impact in relation to nitrate loading.

Moreover, Monterey County Code Chapter 15.23 sets a limit of 6 mg/l nitrate-nitrogen effluent from wastewater reclamation facilities. Permit approval from the Monterey County Division of Environmental Health is required for the construction of new sewage treatment and reclamation facilities.

Consistency with Relevant Plans and Policies

The following policies of the Carmel Valley Master Plan (CVMP) are applicable to the proposed project:

CVMP Policy 54.1.5: Development shall be limited to that which, can be safely accommodated by onsite sewage disposal, or in the case of the lower Carmel Valley, by the Carmel Valley Sanitary District. Consideration may be given to package plants operated under supervision of a County service provider.

CVMP Policy 54.1.6: When projects for low/moderate income owners or renters are proposed at densities exceeding those recommended by the wastewater application rates of the Wastewater Study, but not exceeding 40 grams/acre/day of total nitrogen, a detailed wastewater study acceptable to the Director of Environmental Health shall be required to determine whether the recommendations of the wastewater study should be relaxed or upheld, and the policies of the Basin Plan, Monterey County Code (Septic System Ordinance) and other applicable health requirements will be met.

CVMP Policy 54.1.8: The County shall encourage and support reclamation projects as a source of additional water supply. Such projects must show conclusively that they do no contribute to the groundwater degradation. If additional water is generated by this method, it may be used to replace

domestic water supply in landscape irrigation and other approved uses to free domestic water for planned growth provided that the water reclaimed creates no adverse environmental impacts.

CVMP Policy 54.1.11: Detailed cumulative ground water quality impact studies shall be conducted for any proposed projects, which will exceed, on a localized or area wide basis, the maximum recommended wastewater application rates contained in the Carmel Valley Wastewater Study.

Consistency Analysis: Consistent with the CVMP policies, the proposed project will either be served by an onsite WTP or it will connect to CAWD facilities via the proposed STEP collection system. According to the report prepared by KJC, the project could be adequately served under either scenario. If the project is developed with the onsite WTP, the tertiary treated reclaimed wastewater will be utilized to irrigate pasturelands and/or common area landscaped lands, thus reducing the project's overall gross water demand, since currently potable water is used to irrigate the project site.

According to the wastewater study prepared by Questa Engineering, with the implementation of the proposed project, the project site will result in a total of 4,429 grams per day of nitrate loading. The project's contribution from wastewater is 391 grams per day (the remaining 4,038 grams per day are a result of the existing livestock operations onsite). Based upon the findings of the Carmel Valley Wastewater Study, Questa Engineering estimated that the total allowable nitrate loading for the project site is 13,462 grams per day. Moreover, based upon the established RWQCB criteria of 40 grams per day per acre, the total allowable nitrate loading from the project site is 36,420 grams per day. Thus, the proposed project does not exceed the established criteria and is consistent with the policies of the CVMP.

4.6 Transportation and Circulation

TJKM Transportation Consultants prepared a Traffic Impact Analysis in October 2004 for the proposed project. This section summarizes the findings of the traffic analysis, which is included in its entirety in Appendix E of this document.

4.6.1 Environmental Setting

Existing Roadway System

Principal access to Carmel Valley is via Laureles Grade Road (from Salinas) and Carmel Valley Road (from Carmel/Monterey). Project site access will be provided off Carmel Valley Road, which is a major two-lane rural highway in Carmel Valley. Carmel Valley Road extends easterly from State Route 1 (SR 1), providing access to different types of developments including residential, commercial, educational (a school) and recreational (golf courses). Carmel Valley Road begins at State Route 1 and ends at Arroyo Seco Road The major cross streets include SR 1, Carmel Rancho Boulevard, and Laureles Grade. The posted speed limit on Carmel Valley Road varies between 45 miles per hour (mph) and 55 mph, depending on the adjacent uses. There are Class II bike lanes along Carmel Valley Road between Carmel Rancho Boulevard and Dorris Drive.

Other major roadways evaluated within the traffic impact analysis include the following:

SR 1 is one of the major highways in Monterey County. It runs in a north-south direction, and provides the project site regional access to Monterey Bay and San Francisco Bay to the north, and Big Sur and San Luis Obispo to the south. Traffic on SR 1 in Carmel Valley is often congested and experiences long delays during peak hours.

Carmel Rancho Boulevard is a four-lane north-south arterial that provides access to the major commercial and service area located south of Carmel Valley Road.

Laureles Grade is a two-lane rural highway in Monterey County. It runs in a north-south direction, and connects Carmel Valley Road to Highway 68, that runs through the City of Salinas.

The following nine intersections were determined to be within the study area for the proposed project (Exhibit 4.6-1):

- SR 1/Carpenter Street;
- SR 1/Ocean Avenue/Carmel Hills Drive;
- SR 1/Carmel Valley Road;
- SR 1/Rio Road;
- Carmel Valley Road/Carmel Rancho Boulevard/Carmel Knolls Drive;
- Carmel Valley Road/Rancho San Carlos Road;
- Carmel Valley Road/Brookdale Drive/Project Driveway;
- Carmel Valley Road/Dorris Drive;
- Carmel Valley Road/Dorris Drive; and

- Carmel Valley Road/Laureles Grade.

Exhibit 4.6-2 illustrates the existing lane geometry of the ten study intersections and Exhibit 4.6-3 identifies the existing turning movement volumes of the study intersections. All four study intersections located on SR 1 as well as the intersections of Carmel Valley Road/Carmel Rancho Boulevard and Carmel Valley Road/Rancho San Carlos Road are controlled by traffic signals. The remaining three intersections on Carmel Valley Road are stop controlled on the minor approach.

Level of Service Analysis

Level of service (LOS) is a qualitative measure that describes operational conditions as they relate to the traffic stream and perceptions by motorists and passengers. The LOS generally describes these conditions in terms of such factors as speed and travel time, delays, freedom to maneuver, traffic interruptions, comfort, convenience, and safety. The operational levels of service are given letter designations from "A" to "F," with "A" representing the best operating conditions (free-flow) and "F" the worst (severely congested). Turning movement counts at all study intersections were collected in early December 2002, except for Highway 68/Laureles Grade, which was counted in June 2003. Based on a comparison with counts conducted in previous years, the December 2002 counts did not need to be adjusted to account for seasonal fluctuations. The detailed turning count data are provided in Appendix E of this Draft REIR.

Signalized Intersections

The operating conditions at the signalized study intersections were evaluated using the 2000 Highway Capacity Manual Operations Method. Peak hour intersection conditions are reported as average delay per vehicle with corresponding LOS for the intersection as a whole.

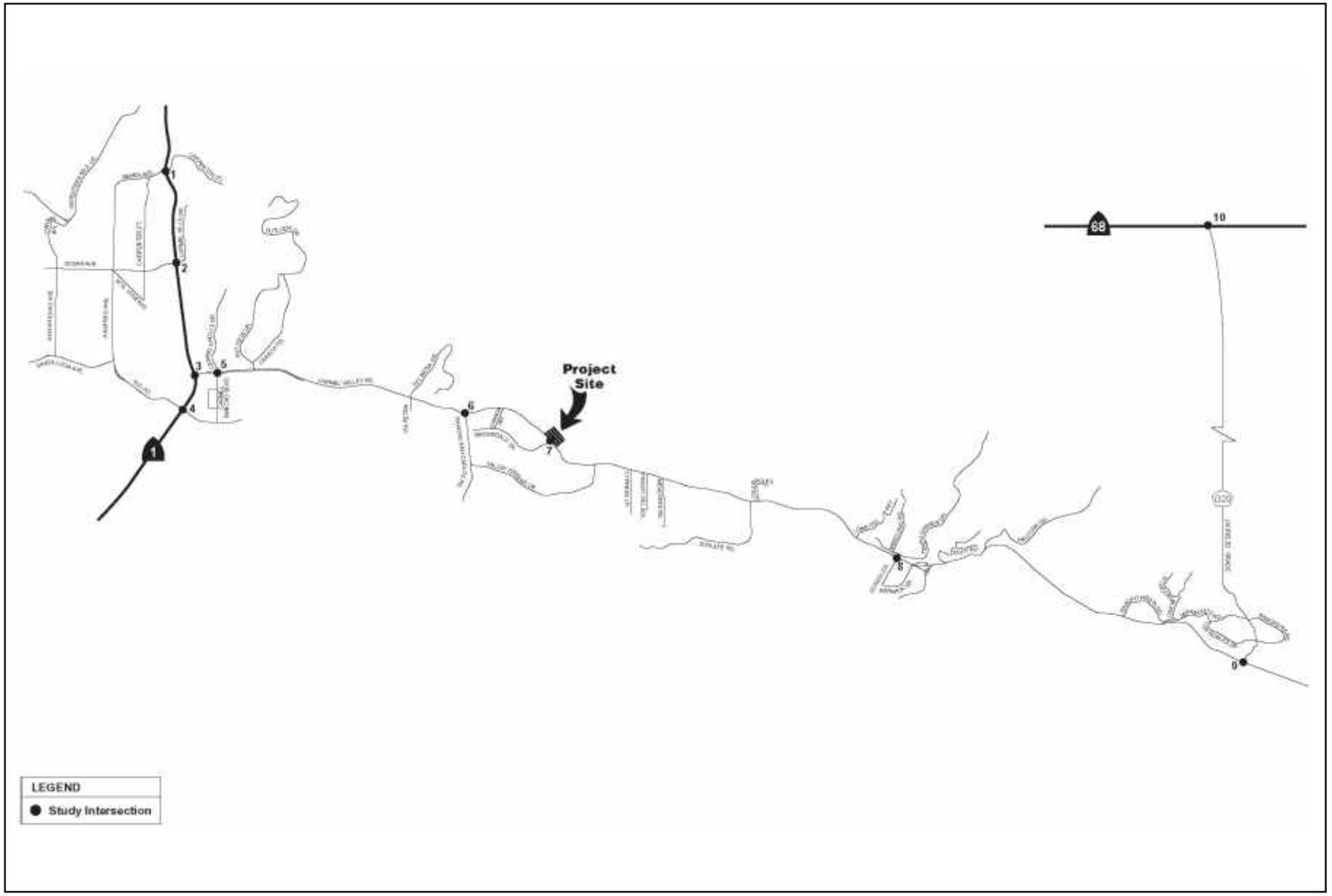
Unsignalized Intersections

The operating conditions at the stop controlled study intersections with the minor approaches were evaluated using the 2000 Highway Capacity Manual (HCM) Unsignalized Method. Peak hour intersection conditions are reported as delay per vehicle with corresponding LOS for each of its minor movements. The methods rank the LOS, and use average delay in seconds as the measure of effectiveness.

The operating conditions at the all-way stop controlled intersections were evaluated using the 2000 HCM Unsignalized Method. This method also ranks the LOS and uses average delay in seconds as its measure of effectiveness. Peak hour intersection conditions are reported as delay per vehicle with corresponding LOS for the intersection as a whole.

As identified in Table 4.6-1, under the existing conditions, the following intersections operate at an acceptable LOS:

- SR 1/Carpenter Street;
- SR 1/Carmel Valley Road;
- SR 1/Rio Road;



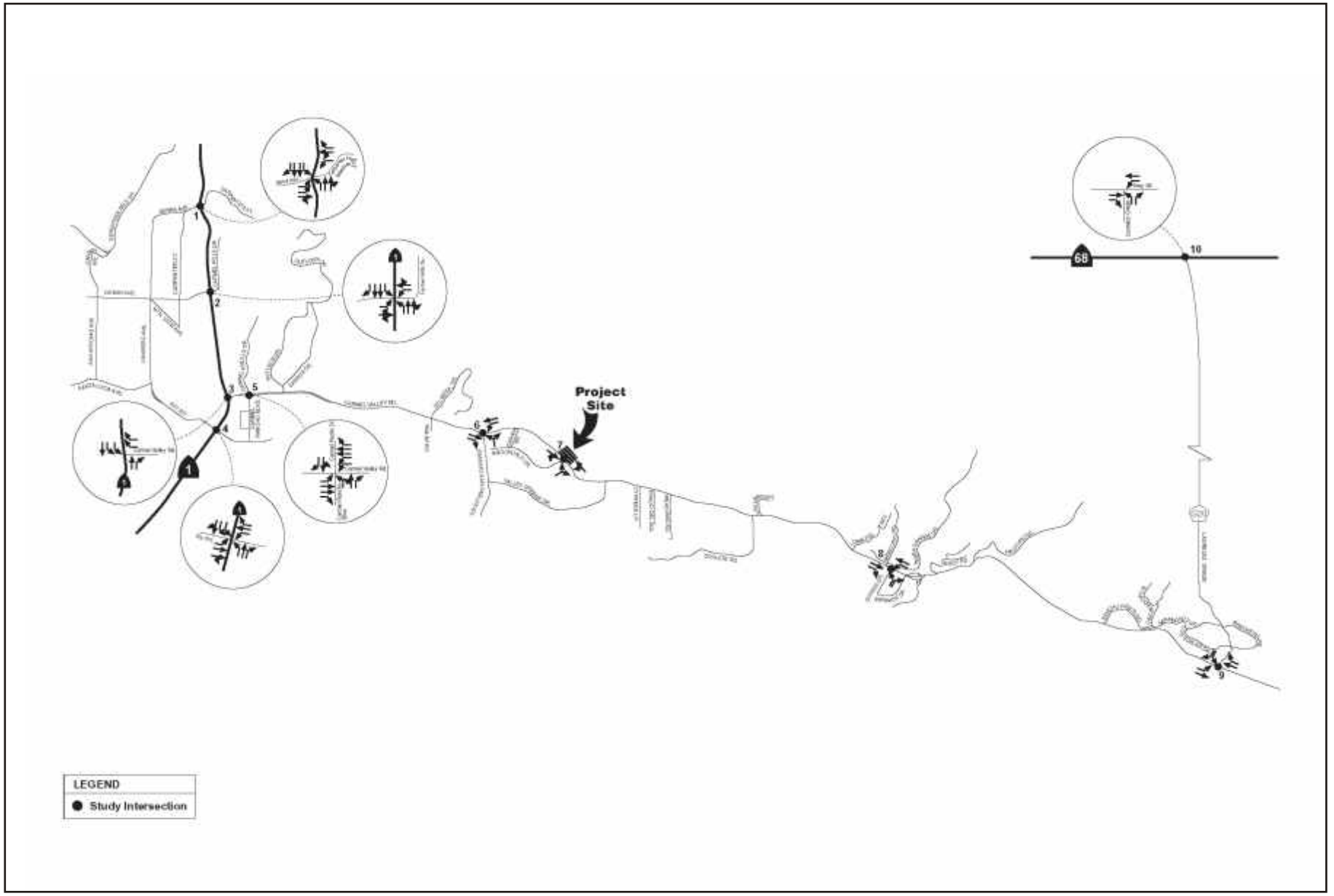
Source: TJKM Transportation Consultants, October 2004.

NORTH

NOT TO SCALE

Exhibit 4.6-1
Study Intersections Map

Michael Brandman Associates

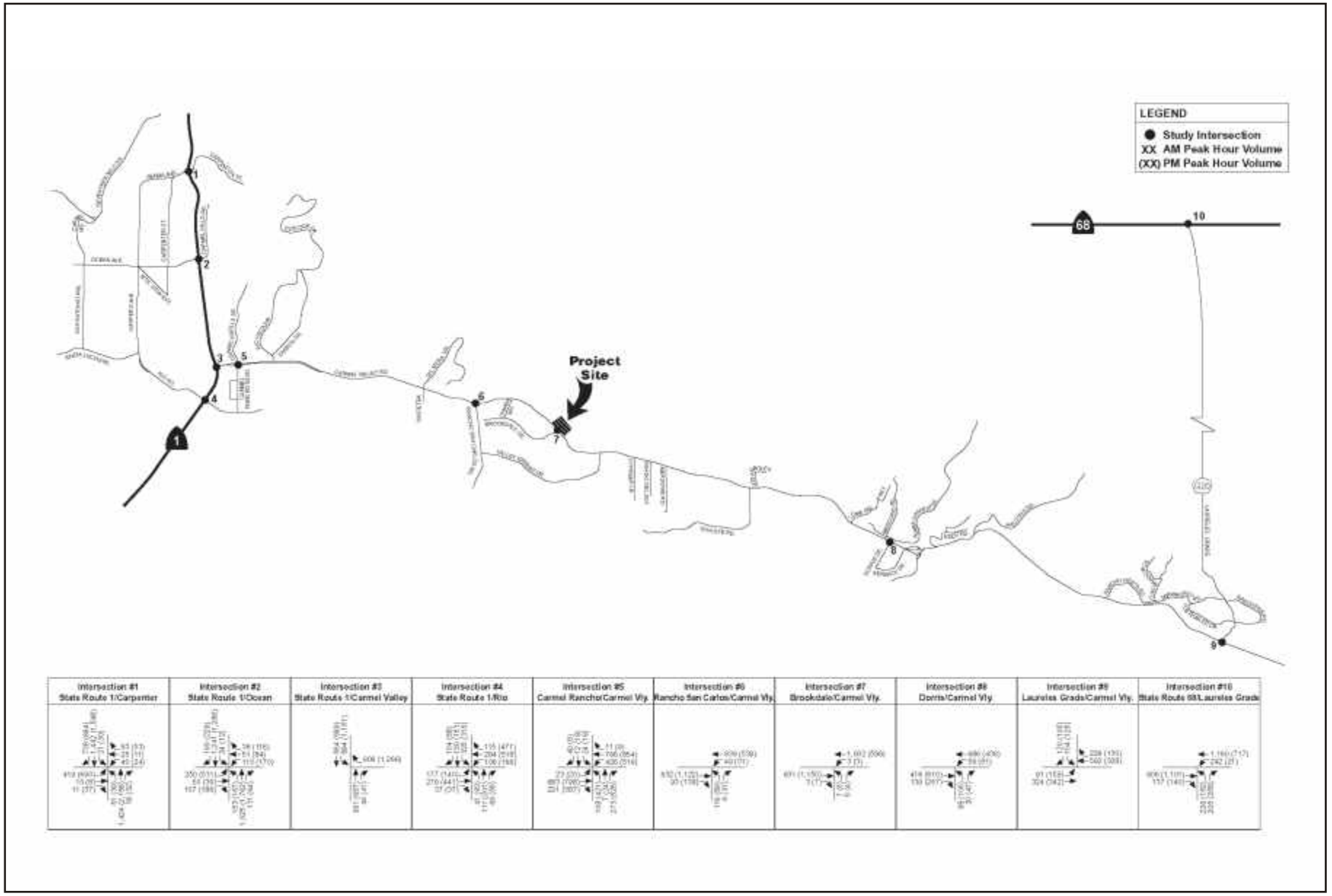


Source: TJKM Transportation Consultants, October 2004.

NORTH

NOT TO SCALE

Exhibit 4.6-2
Lane Configurations at Study Intersections



Source: TJKM Transportation Consultants, October 2004.

NORTH

NOT TO SCALE

Michael Brandman Associates

21370002 • 12/2004 | 4.6-3_existing turning movement volumes.cdr

Exhibit 4.6-3
Existing Turning Movement Volumes

- Carmel Valley Road/Carmel Rancho Boulevard; and
- Carmel Valley Road/Rancho San Carlos Road.

As identified in Table 4.6-1, the following four intersections currently operate at an unacceptable LOS:

- SR 1/Ocean Avenue/Carmel Hills Drive currently operates at LOS F during both AM and PM. peak hours.
- The minor approach of the stop controlled Carmel Valley Road/Brookdale Drive intersection currently operates at LOS F in the AM and LOS E in the PM peak hours. In conjunction with the Carmel Valley Road Improvements, the County plans to install a left-turn channelization on the westbound approach. However, the LOS analysis performed indicates that the intersection's minor approach will still operate as unacceptable with the inclusion of left-turn channelization.
- The minor approach of the Carmel Valley Road/Dorris Drive intersection currently operates at LOS F during both AM and the PM peak hours. Under current conditions, this intersection meets the Caltrans peak hour signal warrant criteria.
- The minor approach of the Carmel Valley Road/Laureles Grade intersection currently operates at LOS E during both AM and the PM peak hours. Under current conditions, this intersection meets the Caltrans peak hour signal warrant criteria.

Table 4.6-1: Study Intersections Existing Levels of Service

Intersection		Control	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	SR 1/Carpenter St. - Utilizing "overlap" for SB and WB RT	Signal Signal	22.9 16.8	C B	39.6 33.4	D C
2	SR 1/Ocean Ave./Carmel Hills Dr. - Widening EB and WB approaches	Signal Signal	24.3 17.6	C B	79.5 33.1	E C
3	SR 1/Carmel Valley Rd.	Signal	10.3	B	26.6	C
4	SR 1/Rio Rd.	Signal	22.0	C	24.4	C
5	Carmel Valley Rd./Carmel Rancho Blvd.	Signal	15.0	B	22.5	C
6	Carmel Valley Rd./Rancho San Carlos Rd.	Signal	11.5	B	9.6	A
7	Carmel Valley Rd./Brookdale Dr. - Installing a traffic signal	1-Way STOP Signal	- (57.5) 4.9	- (F) A	- (43.0) 5.6	- (E) A

Table 4.6-1 (Cont.): Study Intersections Existing Levels of Service

Intersection		Control	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
8	Carmel Valley Rd./Dorris Dr. - Installing a traffic signal	1-Way STOP Signal	- (92.3) 7.8	- (F) A	- (62.4) 8.0	- (F) A
9	Carmel Valley Rd./Laureles Grade - Installing a traffic signal	1-Way STOP Signal	- (41.4) 10.8	- (E) B	- (36.4) 12.5	- (E) B
10	Highway 68/Laureles Grade	Signal	20.2	C	17.4	B

Notes:
1. Analysis is performed using the software TRAFFIX based on the 2000 Highway Capacity Manual methodologies.
2. Delay and Level of Service (LOS) are for the worst approach when the intersection is controlled by one/two way stop control (i.e., intersection #7, 8, and 9).
3. Delay and Level of Service (LOS) are the average for all approaches when intersection is controlled by an all-way stop or traffic signals.

Source: TJKM Transportation Consultants, October 2004.

The County of Monterey, at the request of the Transportation Agency for Monterey County (TAMC) and Caltrans, currently collects two traffic impact fees for SR 1 improvements. One fee is for short-term improvements, based on PM peak trips using SR 1 north of Carmel Valley Road. This fee is called the Carmel Valley Master Plan Traffic Impact Fee (CVTIF), which will be used for funding the planned improvements along Carmel Valley Road. This program includes the signalization at Carmel Valley Road/Dorris Drive and Carmel Valley/Laureles Grades.

Similarly, TAMC completed a Project Study Report (PSR) for SR 1 in the Carmel Valley area, to outline the improvement alternatives for the corridor. The agency has been collecting a transportation impact fee based on the number of additional project-related daily trips on SR 1 to fund long-term capacity improvements along the SR 1 corridor.

Roadway Segment Analysis

Roadway segment analysis was conducted to determine the number of through lanes that may be needed to have Carmel Valley Road operate at acceptable LOS. Monterey County staff provided the existing (Year 2002) average daily traffic for the four roadway segments that were analyzed for this project. The analysis assumed that the PM peak hour volumes were approximately 10 percent of the daily traffic volume. The analysis focused on the PM peak traffic conditions on the following four segments of Carmel Valley Road:

- Robinson Canyon Road - Schulte Road (1,460 vehicles per hour [vph]);
- Schulte Road - Rancho San Carlos Road (1,630 vph);
- Rancho San Carlos Road - Carmel Rancho Boulevard (2,430 vph); and
- Carmel Rancho Boulevard - SR 1(2,410 vph).

As previously noted, Carmel Valley Road is a two-lane rural highway. The information about the LOS methodology for two-lane highway (one-lane in each direction) segments can be found in the Transportation Research Board's 2000 Highway Capacity Manual (HCM). The HCM suggests that operating at an acceptable LOS, such a roadway configuration has a total capacity of 3,400 vph.

The existing roadway volumes for the four study segments are within the two-lane highway capacity.

4.6.2 Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

In accordance with CEQA Guidelines, a significant traffic and circulation impact will occur if a project will result in:

- An increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system;
- Exceeding, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- A change in traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access;
- Result in inadequate parking capacity; or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

In addition, the Monterey County Regional Transportation Plan (RTP), last updated 1994, and Carmel Valley Master Plan (CVMP) Policy 1.2.1 establishes the following LOS standards:

- No degradation below LOS D for those urban roads now operating at LOS D or better;
- No degradation below LOS C for those rural roads now operating at LOS C or better; and
- No degradation below existing LOS for all other roads.

Potentially Significant (Traffic and Circulation Impact 1) - Increase in Vehicle Trip Generation and Level of Service Deficiencies: The project trip generation was forecasted based upon the trip generation rates provided in the Trip Generation Manual, 6th Edition, published by the Institute of

Transportation Engineers (ITE) 1997. Trip generation was based upon the development of 110 single-family homes[1].

Table 4.6-2: Project Trip Generation

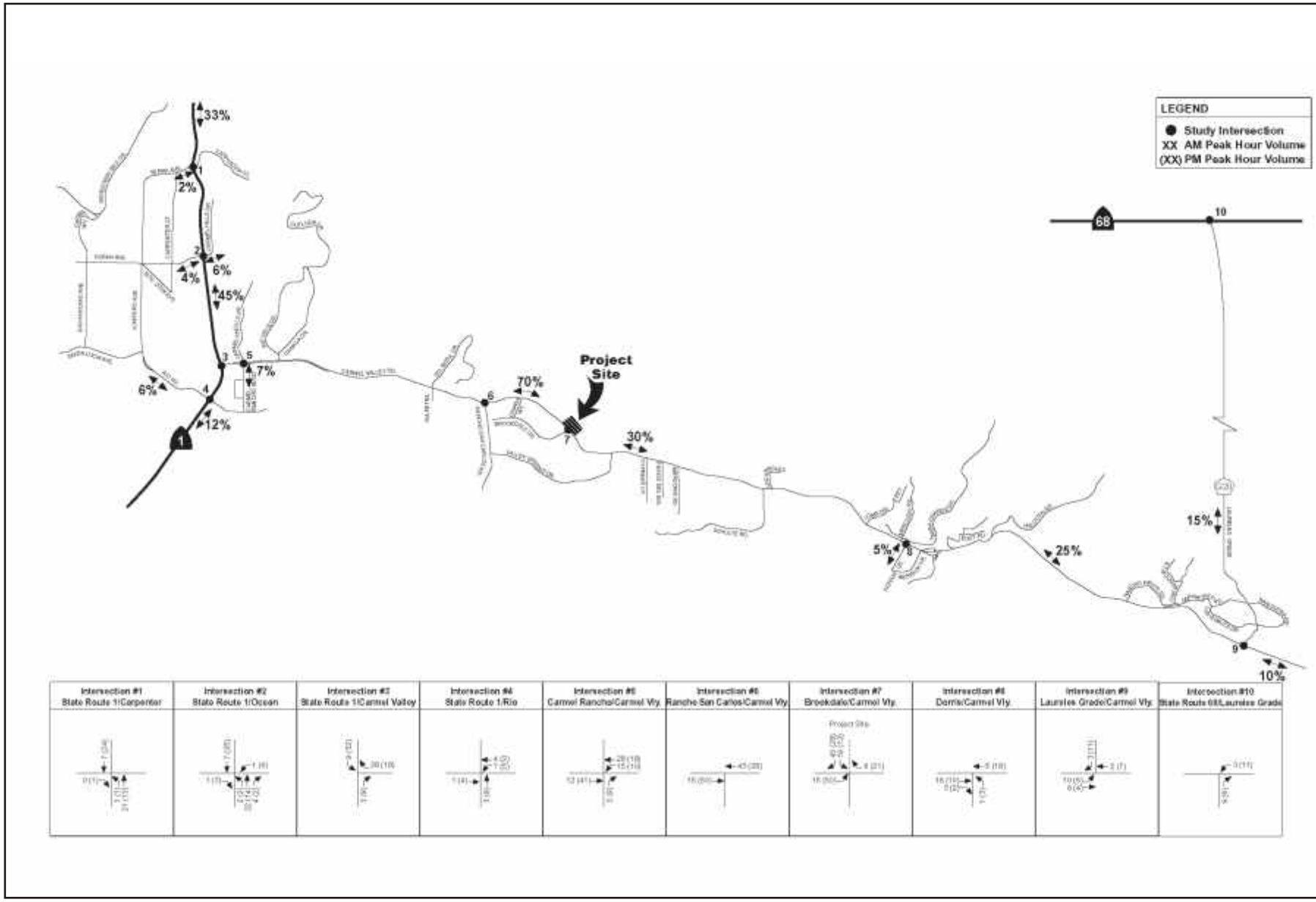
Use	Size	Daily		AM Peak Hour					PM Peak Hour				
		Rate	Trips	Rate	%In: Out	In	Out	Total	Rate	%In: Out	In	Out	Total
SF Homes	110 Units	9.57	1,053	0.75	25:75	21	62	83	1.01	64:36	71	40	111
Total	—	—	1,053	—	—	21	62	83	—	—	71	40	111
Source: TJKM Transportation Consultants, September 2003.													

The proposed project will result in an increase in traffic generation within the project area. Specifically, the proposed project is anticipated to generate 1,053 daily vehicle trips, 83 of which will occur during the AM peak hour and 111 of which will occur during the PM peak hour. The additional vehicle trips generated by the project will result in an increase in congestion on project area roadways, which will lead to LOS deficiencies at some of the project area intersections: SR 1/Carpenter intersection (PM peak hours); SR 1/Ocean Avenue/Carmel Hills intersection (AM and PM peak hours); the minor approach of the Carmel Valley Road/Brookdale Drive intersection (AM and PM peak hours); Carmel Valley Road/Dorris Drive intersection (AM and PM peak hours); Carmel Valley and Road/Laureles Grade intersection (AM and PM peak hours). Additionally, there is potential for the project to create site distance impacts along the project's access roadway and Carmel Valley Road and Brookdale Drive.

The trip distribution assumptions for the proposed project were developed based on existing travel patterns, knowledge of the study area and input from County staff. Distribution and assignment of project-generated trips are presented in Exhibit 4.6-4. Traffic is expected to travel to and from the site according to the distribution assumptions described below.

- 33% will travel to/from the north via SR 1;
- 15% will travel to/from the north via Laureles Grade;
- 12% will travel to/from the south via SR 1;
- 10% will travel to/from the east via Carmel Valley Road;
- 7% will travel to/from the service/commercial development on Carmel Rancho Boulevard;
- 6% will travel to/from Carmel High School;
- 6% will travel to/from the west via Rio Road;
- 5% will travel to/from the service/commercial development on Dorris Drive;

[1] According to the Trip Generation Manual, 6th Edition, the description of inclusionary housing is general in nature since these developments vary by density and type of dwelling. It is therefore recommended that when information on the number and type of dwellings is known, the trip generation should be calculated based on the known type of dwelling rather than on the basis of land use. Therefore, trip generation was calculated based on 110 units. Project trip generation does not take into account the approximate 13 peak hour trips (11 inbound and 2 outbound) that are generated from the existing onsite equestrian center, which will be retained with project implementation.



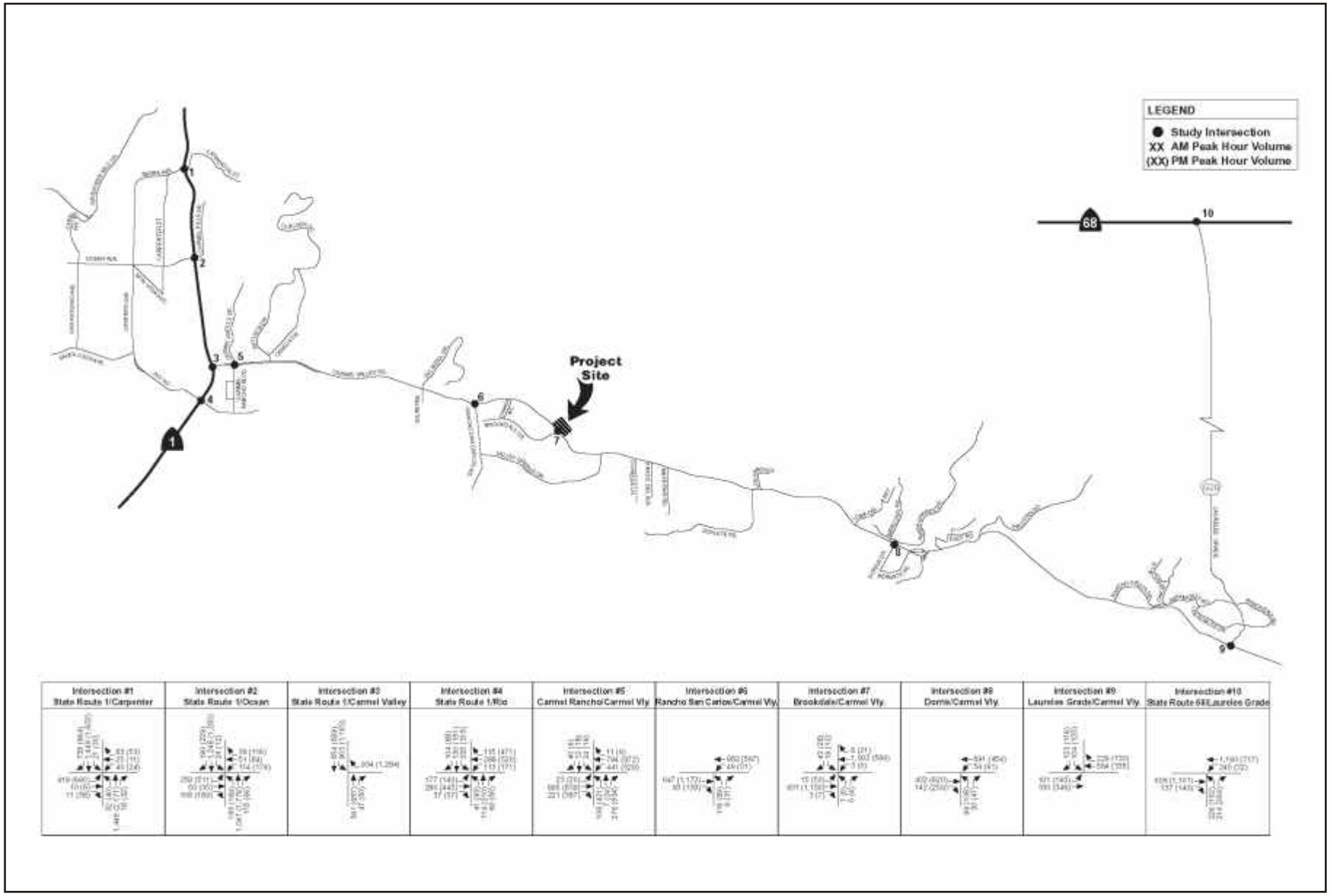
Source: TJKM Transportation Consultants, October 2004.

NORTH

NOT TO SCALE

Exhibit 4.6-4
Proposed Project Trip Distribution and Assignment

Michael Brandman Associates



Source: TJKM Transportation Consultants, October 2004.

NORTH

NOT TO SCALE

Michael Brandman Associates

21370002 • 12/2004 | 4.6-5_existing and proposed project turning movement volumes.cdr

Exhibit 4.6-5
Existing & Proposed Project Turning Movement Volumes

- 4% will travel to/from the west via Ocean Avenue; and
- 2% will travel to/from the west via Carpenter Street.

Project traffic was added to the existing volumes to obtain the expected turning movement volumes for the existing traffic plus project traffic. See Exhibit 4.6-5 for the forecasted existing plus project peak hour turning volumes. The LOS analysis results are summarized in **Error! Not a valid bookmark self-reference.**.

Table 4.6-3: Existing Plus Project Levels of Service

Intersection		Control	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	SR 1/Carpenter St. - Using overlap for WB right-turn	Signal Signal	30.7 29.3	C C	55.8 50.6	E D
2	SR 1/Ocean Ave./Carmel Hills Dr. - widening EB and WB approaches	Signal Signal	36.9 27.1	D C	95.6 45.6	F D
3	SR 1/Carmel Valley Rd.	Signal	17.5	B	39.7	D
4	SR 1/Rio Rd.	Signal	34.3	C	35.4	D
5	Carmel Valley Rd./Carmel Rancho Blvd.	Signal	22.8	C	30.6	C
6	Carmel Valley Rd./Rancho San Carlos Rd.	Signal	15.5	B	13.7	B
7	Carmel Valley Rd./Brookdale Dr. - Installing a traffic signal	1-Way Stop Signal	-(120+) 3.5	-(F) A	-(80.8) 3.6	-(F) A
8	Carmel Valley Rd./Dorris Dr. - Installing a traffic signal	1-Way Stop Signal	-(103.7) 8.1	-(F) A	-(74.2) 8.4	-(F) A
9	Carmel Valley Rd./Laureles Grade - Installing a traffic signal	1-Way Stop Signal	-(45.8) 12.9	-(E) B	-(38.4) 16.7	-(E) B
10	Highway 68/Laureles Grade	Signal	20.4	C	18.6	B

Under the existing plus project scenario, four out of the nine study intersections are expected to continue to operate at acceptable LOS. Five intersections would operate at below standard LOS under the existing plus project scenario as follows:

- SR 1/Carpenter intersection (PM peak hours);
- SR 1/Ocean Avenue/Carmel Hills intersection (AM and PM peak hours);
- The minor approach of the Carmel Valley Road/Brookdale Drive intersection (AM and PM peak hours);

- Carmel Valley Road/Dorris Drive intersection (AM and PM peak hours); and
- Carmel Valley Road/Laureles Grade intersection (AM and PM peak hours).

In addition, using information provided by the County of Monterey in conjunction with the forecasted project-related traffic volumes, TJKM projected the PM peak roadway volumes for the four study area roadway segments along Carmel Valley Road as follows:

- Robinson Canyon Road - Schulte Road (1,538 vph);
- Schulte Road - Rancho San Carlos Road(1,708 vph);
- Rancho San Carlos Road - Carmel Rancho Boulevard (2,508 vph); and
- Carmel Rancho Boulevard - SR 1(2,469 vph).

As noted under the Environmental Setting, the HCM (2000) indicates that a two-lane rural highway such as Carmel Valley Road has a total capacity of 3,400 vph. Therefore, the study area roadway segments along Carmel Valley Road should be able to accommodate the existing plus project-related traffic in the area. However, the Carmel Valley Master Plan (as of 1995) lists three long-term passing lane improvements along Carmel Valley Road at the following locations:

- In front of September Ranch;
- Opposite of Garland Ranch Regional Park, which is east of Robinson Canyon Road; and
- Near Laureles Grade Road, which is east of Garland Ranch Regional Park.

Mitigation Measures

4.6-1: At the intersection of SR 1/Carpenter Street, use overlap phasing to have the westbound right-turns synchronized with the southbound SR 1 left-turn movement.

4.6-2: At the intersection of Carmel Valley Road/Brookdale Drive/September Ranch Road, install a right-turn taper on westbound Carmel Valley Road and install a left-turn lane for both the eastbound and westbound Carmel Valley Road approaches.

Implementation of these mitigation measures would reduce vehicle trip generation and LOS impacts to less than significant.

Monitoring Action

Prior to the issuance of building permits, the project applicant shall submit verification to the County of Monterey Building Public Works Department that the project applicant complied with Mitigation Measures 4.6-1 and 4.6-2.

Mitigation Measures

4.6-3: Contribute fair share fees, as determined by the County for CVMP Traffic Impact Fees. Fees would be required for the following improvements:

- Signalizing the Carmel Valley Road/Dorris Drive intersection;
- Signalizing the Carmel Valley Road/Laureles Grade intersection; and
- Signalizing the Rio Road/Carmel Ranch Boulevard intersection.

4.6-4: Contribute fair share fees for SR 1 improvements for all project-generated trips expected to use SR 1 north of Carmel Valley Road. The following improvements include:

- At the intersection of SR 1/Ocean Avenue/Carmel Hills Drive, widening should occur to the eastbound and westbound approaches to have one exclusive left-turn lane, one shared left-turn/through lane, and one exclusive right-turn lane.

4.6-5: The project proponent shall contribute fair share fees for the left-turn channelization for both the eastbound and westbound approaches of the intersection of Carmel Valley Road/Brookdale Drive.

4.6-6: The project proponent shall contribute fair share fees for the overlap phasing improvements along Carmel Valley Road (as identified in the CVMP, 1995) at the following locations:

- In front of September Ranch;
- Opposite of Garland Ranch Regional Park, which is east of Robinson Canyon Road; and
- Near Laureles Grade Road, which is east of Garland Ranch Regional Park.

Implementation of these mitigation measures would reduce vehicle trip generation and LOS impacts to less than significant.

Monitoring Action

Prior to the issuance of a building permit, the project proponent shall pay a pro-rata share fair traffic impact fee to the Monterey County Planning and Building Inspection Department.

Mitigation Measure

4.6-7: The project applicant shall install a safe transit stop(s) convenient to both the entrance to the planned unit development and to the existing equestrian center. The applicant shall provide a passenger shelter in each direction, an improved pullout in each direction, and onsite signage at the project site showing the transit schedule and map.

Implementation of the mitigation measure would reduce vehicle trip generation and LOS impacts to less than significant.

Monitoring Action

Prior to the issuance of occupancy permits, the project applicant shall submit verification to the County of Monterey Building Public Works Department that the project applicant has satisfied Mitigation Measure 4.6-5.

Prior to the issuance of a building permit, the project proponent shall submit transit plans that are subject to review and approval by the County of Monterey Public Works Department and the Monterey-Salinas Transit.

Potentially Significant (Traffic and Circulation Impact 2) - Site Distance: September Ranch Road, the project access road, will connect with Carmel Valley Road at Brookdale Drive, forming a four-legged intersection. Carmel Valley Road is posted with a 50-mph speed limit. The standard stopping sight distance, recommended by the Caltrans Highway Design Manual (HDM), for a roadway with a design speed of 55-mph (assumed 5-mph higher than the posted speed limit) is 500 feet. Table 405.1A of the HDM recommends 630 feet for corner sight distance, based on the "7-1/2 Second Criteria."

From the proposed location of September Ranch Road, an outbound driver would have a sight distance of approximately 375 feet looking to his right (or looking west), which does not meet the Caltrans standard for being able to see a 6 inch object on the Brookdale Drive. The sight distance is restricted by the small vertical curve on Carmel Valley Road. However, given that many vehicles are approximately 3 feet tall, much higher than 6 inches, drivers on Carmel Valley Road and drivers on September Ranch Road should be able to see each other from 600 feet away. The sight distance looking to the left (or looking east) is approximately 760 feet, which exceeds the required limit for stopping and corner sight distance.

Mitigation Measures

4.6-8: The project applicant shall install the fourth (north) leg of September Ranch Road (the project access road) at the existing stop controlled T-intersection of Carmel Valley Road/Brookdale Drive. The project applicant shall be responsible for signalizing this intersection and any signal coordination costs associated with this signalization.

4.6-9: Prior to the issuance of building permits, install an intersection ahead warning sign on eastbound Carmel Valley Road in advance of September Ranch Road to alert drivers on Carmel Valley Road.

Implementation of these mitigation measures would reduce site distance impacts to less than significant.

Monitoring Action

Prior to the issuance of occupancy permits, the project applicant shall submit verification to the County of Monterey Building Public Works Department that the project applicant has satisfied Mitigation Measures 4.6-6 and 4.6-7.

Consistency with Relevant Plans and Policies

The following policies contained within the Carmel Valley Master Plan (CVMP) are applicable to the proposed project and are described below:

CVMP Policy 37.4.1: The County shall encourage overall land use patterns, which reduce the need to travel.

CVMP Policy 37.4.2: The County shall encourage the provision, where feasible, of bicycle and automobile storage facilities to be used in conjunction with public transportation.

CVMP Policy 39.1.7: It is recommended that fees for off-site major thoroughfares be imposed as a condition of granting building permits. The recommended zone of influence is the Carmel Valley Master Plan Study Area with funds expended for the Valley Road or other major roadway improvements.

CVMP Policy 39.2.2.1: The needs of bicyclists, pedestrians, utilities, and drainage shall be considered, and where appropriate, provided for on all public right—ways where such improvements shall be safe for their intended use.

CVMP Policy 39.2.2.2: Bike routes must be considered in conjunction with all new road construction and improvements to existing roads.

CVMP Policy 39.2.5.1: Multiple driveway accesses to Carmel Valley Road should be discouraged. Approval of future development of land having frontage on Carmel Valley Road must be conditioned upon minimizing access to Carmel Valley Road, or denying it if access is otherwise available

CVMP Policy 29.2.6.1: Wherever possible a network of shortcut trails and bike paths should interconnect neighborhoods, developments, and roads. These should be closed to motor vehicles and their intent is to facilitate movement within the Valley without the use of automobiles.

CVMP Policy 39.2.7: In hillside areas, relaxation of road standards should be permitted for low-density developments where it can be demonstrated that reduced standards result in fewer or less sever cut and fill slopes, and where bicycle, vehicular, and pedestrian safety is not adversely affected. In such cases, it must also be demonstrated that the relaxed standards positively contribute to furtherance of plan policies related to hazards avoidance, protection of biological resources, or protection of viewshed.

CVMP Policy 39.2.8: No roads should cross slopes steeper than 30% unless factors of erosion and visible scarring can be mitigated.

CVMP Policy 39.3.1.3: Left turn channelizations and/or ingress-egress tapers at significant access points on Carmel Valley Road should be high priority improvements to alleviate existing hazards.

CVMP Policy 40.2.1.1: An appropriate setback at a minimum of 100 feet shall be established along Carmel Valley Road without causing existing structures to become non-conforming and without rendering existing lots of record unbuildable.

CVMP Policy 41.1.2.1: New major developments with access adjacent to Carmel Valley Road shall be required to provide space for the transit buses to stop, the parking of cars and facilities for the safe storage of bicycles.

The following 2000 Regional Transportation Policies (RTP) are applicable to the proposed project:

RTP Policy 1.1.1: Land use planning shall be coordinated with transportation planning to fully mitigate the traffic impacts of new development.

RTP Policy 1.1.3: Bicycle and pedestrian access and transit access shall be incorporated into the design of new residential and commercial development by amending development standards, zoning ordinances, and applicable subdivision ordinances.

Consistency Analysis: The project site is located in an area of relatively low-density development and will result, for the most part, in additional low-density high-income housing. Such uses are not generally oriented to alternatives to single-occupancy vehicle trips such as transit or bicycle trips. However, the continued trend of development in the Carmel Valley area is towards such low-density housing. To ensure consistency with the CVMP, the applicant is also providing low-income, moderate-density housing with access for bus service. Furthermore, the project does not conflict with the policies of the CVMP in that it does not preclude the County from providing low-density, transit oriented development elsewhere. As with the CVMP, the project is consistent with the RTP, through the inclusion of a safe and convenient public transit stop accessible to the proposed development. Bicycle storage or vehicle parking is not proposed at the transit stop since the distance between the project site and the transit stop is considered nominal. To ensure further consistency with the CVMP, pedestrian and equestrian trails are located throughout the project site

Moreover, consistent with the CVMP, the proposed project has provided appropriate setbacks (e.g., minimum of 100 feet) from Carmel Valley Road. The County adopted improvement plans for Carmel Valley Road that would result in acceptable LOS. These improvements require developer contributions toward identified improvements. The County also developed a set of interim improvements in the SR 1/Carmel Valley Road vicinity, which are underway and/or completed. These improvements will be phased in as funds become available. To ensure consistency with the CVMP and RTP, the project will be required to fund traffic impact fees for Carmel Valley Road as established by resolution of the Monterey County Board of Supervisors, as well as a pro-rata share of SR 1 improvements. In addition, the County has adopted a TAMC and endorsed a Deficiency Plan now being implemented to resolve congestion problems along SR 1 of which the project will be required to pay its fair share.

Consistent with CVMP, the project would limit access to the site to one location along Carmel Valley Road. There are currently two access points to the property. However, the existing driveway in the vicinity of the proposed 15-unit inclusionary housing portion of the project is rarely used. The single project entrance was designed to provide a minimum safe access point to the property. The project will also include lane channelization and tapers as part of the access improvements.

Finally, to ensure further consistency with the CVMP, the applicant is requesting approval of a variance to the Subdivision Ordinance to allow grading for roads on slopes greater than 30 percent to allow flexibility in the design of portions of the circulation network to avoid natural resources and/or avoid or minimize cut slopes.

4.7 Air Quality

According to the County of Monterey General Plan, "Air quality is determined by the ability of the environment to disperse, transform, and remove pollutants; the quantity of emissions; the physical location and configuration of emission sources and type and amount of background pollutants present. Air pollution is the result of impurities being introduced into an air basin in such abundance that they cannot be adequately absorbed or removed before they accumulated in harmful concentrations."

In preparation for the Draft REIR, Giroux & Associates reviewed existing air quality information pertaining to the project site, including regulatory documents, professional publications, and air quality studies previously prepared for the project study area (located within the North Central Coast Air Basin). Subsequently, this information has been documented and updated to accurately reflect existing air quality conditions within the project area. The Air Quality Assessment may be referenced in its entirety in Appendix F of this Draft REIR.

4.7.1 Environmental Setting

Climate and Meteorology

The September Ranch Subdivision project site is located in Carmel Valley, a northwest-southwest trending valley bounded by ridges of the California Coastal Range. Carmel Valley experiences a "Mediterranean" climate with warm, dry summers and mild, rainy winters. Daily variations in the valley climate are influenced by the interaction between ocean and land air masses that create onshore (up valley) winds in the daytime and weak offshore (down-valley) breezes at night. Inversion layers, which tend to aggravate pollution problems created by automobile emissions, are present in the valley a significant part of the year.

Meteorological conditions in the North Central Coast Air Basin (NCCAB), which includes Monterey, Santa Cruz, and San Benito counties, are generally favorable in terms of maintaining relatively good air quality. Onshore winds across Monterey Bay normally bring clean air into the region. The Carmel Valley is shielded from substantial intrusion from polluted airsheds and contains few localized sources of emission. Project site air quality responds very favorably to the effects of meteorology and topography.

Air Quality Management

Air quality management responsibilities exist at the local, state, and federal levels of government. Locally, the Monterey Bay Unified Air Pollution Control District (MBUAPCD) has primary responsibility for control of stationary sources of pollution.

Control of mobile sources of air pollution is exercised at the state and federal levels. Emission control devices are required by the California Air Resources Board (ARB) on vehicles sold in California. ARB establishes state-wide ambient air quality standards, monitors air pollutants, designates air basins, and if necessary, exercises control of stationary air pollutant sources.

At the federal level, the U.S. Environmental Protection Agency (EPA) is responsible for air pollution control activities. The Clean Air Act of 1963 authorized the EPA to establish air quality standards, to

establish emission standards for stationary and mobile sources, and to require all states to develop and adopt implementation plans to achieve and maintain the standards.

Ambient Air Quality Standards

The EPA is the federal agency responsible for administering the Federal Clean Air Act Amendments of 1990. As a regulatory agency, EPA's principal functions include setting national Ambient Air Quality Standards (AAQS). These standards define the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect "sensitive receptors" defined as that segment of the public most susceptible to respiratory distress or infection such as asthmatics, the very young, the elderly, people weak from other illness or disease, or persons engaged in heavy work or exercise. Since California already had standards in existence before federal AAQS were established, and because of unique meteorological problems in the state, there is considerable diversity between state and federal standards currently in effect in California as shown in Table 4.7-1. The state standards are in most cases more stringent than the federal standards.

Table 4.7-1: Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	0.12 ppm (235 µg/m^3)	Same as Primary Standard	Ethylene Chemi-luminescence
	8 Hour	—		0.08 ppm (157 µg/m^3)		
Respirable Particulate Matter (PM_{10})	Annual Geometric Mean	30 µg/m^3	Size Selective Inlet Sampler ARB Method P (8/22/85)	—	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	24 Hour	50 µg/m^3		150 µg/m^3		
	Annual Arithmetic Mean	—		50 µg/m^3		
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean			15 µg/m^3		
Carbon Monoxide (CO)	8 hour	9.0 ppm (10 mg/m^3)	Non-dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—		

Table 4.7-1 (Cont.): Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	Gas Phase Chemi-luminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1 Hour	0.25 ppm (470 µg/m^3)		—		
Lead	30 Days average	1.5 µg/m^3	AIHL Method 54 (12/74) Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Fluorescence	0.030 ppm (80 µg/m^3)	—	Pararosoaniline
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		—	—	
Visibility Reducing Particles	8 Hour (10 am to 6 pm PST)	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when the relative humidity is less than 70 percent. Method: ARB Method V (8/18/89).		**No Federal Standards**		
Sulfates	24 Hour	25 µg/m^3	Turbidimetric Barium Sulfate (AIHL Method 61 (2/76)			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Cadmium Hydroxide STRactan			

Source: Giroux & Associates, October 2003.

Evaluation of the most current data on the health effects of inhalation of fine particulate matter prompted the California ARB to recommend adoption of the statewide PM-2.5 standard that is much more stringent than the federal standard. This standard was adopted on June 20, 2002. The State PM-2.5 standard is more of a goal in that it does not have specific attainment planning requirements like a federal clean air standard. Violations of the more stringent state PM-2.5 standard will be a constant reminder that major progress needs to be made to protect the health of those citizens most sensitive to airborne, small diameter, particulate pollution.

Planning and enforcement of the federal standards for PM-2.5 and for ozone (8-hour) were put on hold through a decision by the U.S. Court of Appeals. The Court of Appeals ruled that the EPA did not have discretionary authority to adopt national clean air standards without specific congressional approval. The Court refused the request for a rehearing filed on behalf of EPA by the Department of Justice. The U.S. Supreme Court heard the appeal in late 2000. In a unanimous decision published at the end of February 2001, the court ruled that the EPA did not require specific congressional authorization to adopt national clean air standards. The Court also ruled that health-based standards did not require preparation of a cost-benefit analysis. The Court did find, however, that there was some inconsistency between existing and "new" standards in their respective attainment schedules. These attainment planning schedule inconsistencies centered mainly on the 8-hour ozone standard. The EPA recently (November 2002) agreed to downgrade the attainment designation for a large number of communities to "nonattainment" for the 8-hour ozone standard. Because the NCCAB meets both the 1- and 8-hour federal ozone standards, the pending EPA action will not substantially alter the attainment planning process for the region.

Violations of ambient air quality standards are determined through data collected at air quality monitoring stations located throughout the air basin, including a monitoring station located in Carmel Valley. This station only measures regional pollution levels such as dust and photochemical smog (ozone). The closest data resource for nitrogen dioxide (NO2) and carbon monoxide (CO) and ultra-fine particulate matter (PM-2.5) is in Salinas. Because some pollutants can be affected by local sources, pollution levels in Salinas may not be fully representative of Carmel Valley baseline conditions. Since the project site has a lower population density and is relatively removed from any localized emissions sources, Carmel Valley air pollution levels are likely even lower than those monitored in Salinas. In the absence of any monitoring data for several pollutants near the project site, the data from Salinas are presumed to be representative of Carmel Valley even if they are perhaps, overstated.

Table 4.7-2 shows only one measurement in the last five years exceeded a state AAQS. No federal standards were exceeded in the last five years of published data (final 2002 data has not been released). The one violation of the state PM-10 standard was likely associated with the Los Padres National Forest wild fires, which is not considered representative of "normal" ambient conditions in the project area. The air quality emphasis in the Carmel Valley is to maintain the generally good air quality currently experienced rather than focus on control programs to achieve attainment.

Table 4.7-2: Project Area Air Quality Summary[1]

Pollutant/Standard	1997	1998	1999	2000	2001
Ozone					
1-Hour > 0.09 ppm	0	0	0	0	0
1-Hour > 0.12 ppm	0	0	0	0	0
1-Hour ≥ 0.20 ppm	0	0	0	0	0
8-Hour > 0.09 ppm	52	57	22	29	34
Max. 1-Hour Conc. (ppm)	0.08	0.08	0.08	0.09	0.08

Table 4.7-2 (Cont.): Project Area Air Quality Summary[1]

Pollutant/Standard	1997	1998	1999	2000	2001
Carbon Monoxide					
1-Hour > 20. ppm	0	0	0	0	0
8-Hour > 9. ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	4.4	3.8	3.8	3.5	3.3
Max. 8-Hour Conc. (ppm)	1.8	2.2	1.8	1.4	1.6
Nitrogen Dioxide					
1-Hour > 0.25 ppm	0	0	0	0	0
Max. 1-Hour Conc. (ppm)	0.06	0.08	0.05	0.07	0.04
Inhalable Particulates (PM-10)[2]					
24-Hour > 50 µg/m^3	0/60	0/62	1/60	0/59	0/61
24-Hour > 150 µg/m^3	0/60	0/62	0/60	0/59	0/61
Max. 24-Hour Conc. (µg/m^3)	31.	28.	57.	27.	30.
Ultra-Fine Particulates (PM-2.5) [2]					
24-Hour > 65 µg/m^3	-	-	0/102	0/73	0/58
Max. 24-Hour Conc.	-	-	30.8	26.4	25.6

[1] Days Standards Were Exceeded and Maximum Concentrations
[2] Items Shown as Ratios = Number Exceeding/Number of Samples
- = Missing data or no measurements.
Salinas Station CO and NO_2 relocated from Salinas High School to Natividad Road in 2000, PM-2.5 relocated from Natividad Road to Salinas High School at the same time.
Source: Giroux & Associates, October 2003

Air Quality Planning

The federal 1-hour ozone standard was achieved in 1990 in the NCCAB. Consistent with federal attainment planning guidelines, the APCD prepared a Redesignation Request and Maintenance Plan for the basin.

The U.S. EPA redesignated the basin a "maintenance area" in March 1997, for the 1-hour federal ozone standard. The basin is an attainment or unclassified area for all other national AAQS.

The NCCAB is classified as a moderate non-attainment air basin for the more stringent 1-hour state ozone standard. The basin is also in non-attainment for the state PM-10 standard. As noted above, these standards are typically met in Carmel Valley. Ozone violations occur mainly at the Pinnacles air monitoring station due to pollution spillover from Santa Clara County. PM-10 violations are more widespread, but occur most frequently at Davenport and Moss Landing.

Planning for attainment of state standards is embodied in the 1991 Air Quality Management Plan (AQMP). The 1997 update demonstrates that the 20 percent reduction target in ozone precursor emissions from the 1987 baseline has been met and that no new control measures (contingency measures) are needed beyond those already in the plan. The 2000 AQMP update for state standards

concluded that the NCCAB will remain on the borderline between attainment and nonattainment of the state 1-hour ozone standard. A combination of meteorological variability, pollution transport from outside the air basin, and local sources will all contribute to a continuing small, but non-zero, number of violations.

Planning for PM-10 attainment is conducted separately from ozone planning. Reports by the MBUAPCD indicate that basin-wide attainment of the PM-10 standard due to basin sources was likely within this decade. The effects of local contamination and "natural" sources, such as sea salt or smoke, may maintain isolated PM-10 "hot spots" beyond 2010.

A general development project such as the September Ranch project relates to the air quality planning process through consistency with growth projection for the region. If the project represents an increment of growth forecast by the Association of Monterey Bay Area Governments (AMBAG), then the project will not interfere with regional attainment of state air quality standards and maintenance of federal standards. Consistency with growth projection is therefore one threshold of significance that must be evaluated during the CEQA process.

4.7.2 Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant air quality impact if it will:

- Conflict with or obstruct implementation of the applicable air quality plan; or
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation; or
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors); or
- Expose sensitive receptors to substantial pollutant concentrations; or
- Create objectionable odors affecting a substantial number of people.

No Impact - Consistency with Air Quality Management Plan (AQMP): Determination of project consistency with the 2000 AQMP is necessary to identify project impacts on air quality, and to meet CEQA requirements. The AQMP incorporates population forecasts that are based on vacant land, General Plan land use designations, development potential, and expected annual rates of growth. For a proposed residential project, consistency with the AQMP is determined by comparing the project population with the population forecasts for the applicable jurisdiction and year of project completion. A proposed project is consistent with the AQMP if the population increase resulting from the project will not cause the estimated cumulative population to be exceeded for the year of project completion. AMBAG's population forecasts for the North Central Coast Air Basin for the unincorporated portion of Monterey County is as follows:

Year 2000-2005	+ 4,468 residents
Year 2005-2010	+ 7,185 residents

Year 2010-1015	+ 6,809 residents
Year 2015-2020	+ 7,909 residents
Year 2000-2020	+ 26,371 residents
Yearly average	+ 1,319/year

The proposed development of 110 homes and perhaps 350 residents, when spread over several years, is readily consistent with overall growth projections. The proposed project will result in a population increase that is within the growth that is accommodated by the AQMP between 2000 and 2020. Therefore, the September Ranch Subdivision project is consistent with the 2000 AQMP.

Potentially Significant (Air Quality Impact 1) - Short-Term Construction Emissions: A residential subdivision such as the proposed September Ranch Subdivision project will impact air quality primarily through increased automotive emissions. These emissions will be widely dispersed in space and time by the mobility of the source. While individual projects do not generally, in themselves, result in exceedances of the ozone standards, they can result in exceedances of ambient standards for localized pollutants (e.g., PM-10 and CO). Additionally, the treatment of wastewater onsite may be a source of nuisance odors if operated or maintained improperly.

Development of roads, driveways, building pads and structures will create temporary emissions of fugitive dust from soil disturbance and combustion emissions from on site construction equipment and from offsite trucks moving dirt, delivering construction materials, and from employee travel to and from the site during construction. The MBUAPCD, in its "CEQA Air Quality Guidelines," states that construction equipment emissions have been incorporated and are accounted for in the AQMP as a specific source category. The only recommended analysis element for construction in the air district's guidelines is for dust created by soil disturbance and off-road equipment travel.

The MBUAPCD recommends use of a detailed evaluation of PM-10 emissions during construction that breaks down various activities into miles of travel on paved or unpaved surfaces, and the amount of material handled, stockpiled or transported on any given day. This breakdown considers information on soil silt content, vehicle speed, equipment along with wind speed, drop heights, and other details that vary from minute to minute and day by-day. There is not enough project-specific information on proposed site development that would allow for such a detailed assessment without a great deal of speculation. Default assumptions on dust generation have therefore been used to assess construction-related PM-10 emissions.

MBUAPCD Guidelines distinguish between projects with major earthworks versus those with minimal required grading; the proposed project is considered a major grading project. The daily PM-10 emissions from an earthmoving project are estimated to be 38 pounds per day, per acre disturbed. A disturbance area exceeding 2.2 acres may cause the daily PM-10 significance threshold of 82 pounds per day to be exceeded. The disturbance area threshold is based upon the use of routine watering as the only dust mitigation measure. With the use of best available control measures (BACM), a somewhat larger area could be under daily disturbance while maintaining PM-10 emissions at less than 82 pounds per day. With the use of BACMs, California ARB emissions estimates suggest that the major earthmoving emission factor of 38 pounds per day could be reduced to the "minimal earthmoving" factor of 10 pounds per day. The ARB uses the 10 pound per day estimate for all construction projects in the NCCAB assuming that use of BACMs is a standard requirement.

In addition to smaller particles that will remain suspended in the air semi-indefinitely, construction dust comprises large diameter inert silicates that are chemically non-reactive and are further readily-filtered out by human breathing passages. They settle out again soon after they are released into the air. These fugitive dust particles are, therefore, more of a potential soiling nuisance as they settle out on parked cars, landscape foliage, or outdoor furniture rather than any adverse health hazard.

Mitigation Measure

4.7-1: The use of BACMs shall be required during grading operations. BACMs that shall be incorporated into the project include:

- Water all active construction areas at least twice daily.
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least 2 feet of freeboard.
- Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites.
- Sweep daily (with water sweepers) all paved access roads, parking areas and staging areas at construction sites.
- Sweep streets daily (with water sweepers), if visible soil materials are carried onto adjacent public streets.
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more).
- Enclose, cover, water twice daily or apply (non-toxic) soil binders to exposed stockpiles (e.g., dirt, sand, etc.).
- Limit traffic speeds on unpaved roads to 15 mph.
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
- Replant vegetation in disturbed areas as quickly as possible.
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 mph.
- Limit the area subject to excavation, grading and other construction activity at any one time to no more than eight (8) acres on any given day.

Implementation of the above mitigation measure will reduce short-term construction emission impacts to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the grading plan shall be reviewed and approved by the Monterey County Planning and Building Inspection Department.

Less than Significant Impact - Vehicle and Other Operational Emissions: The primary source of long-term emissions associated with the proposed project are motor vehicle trips to and from the project site. Generally, vehicle trips associated with the project are home-work trips, home-shopping

trips, home-school trips, and visitors and deliveries. The number of trips associated with proposed land uses on the site were documented in the project traffic study as 1,053 daily trips. The emissions associated with this level of trip-making, and the associated area source emissions, were calculated using the ARB's URBEMIS2002 computer model. The results are summarized in Table 4.7-3.

Table 4.7-3: Project Operational Source Emissions (2005)

Source	Emissions (pounds per day)				
	ROG	CO	NOx	PM-10	SOx
Mobile	12.9	140.2	15.0	11.1	0.1
Area Sources	5.6	1.9	1.4	0.0	0.0
TOTAL	18.5	142.1	16.4	11.1	0.1
MBUAPCD Threshold	137	550	137	82	150
Source: Giroux & Associates, October 2003.					

Emissions for each of the five pollutants analyzed are well below the MBUAPCD CEQA-significance threshold. Project-related mobile plus area sources range from less than 1 percent of the threshold for SOx to a maximum of 26 percent of the CO threshold. The proposed project is not large enough to have a significant air quality impact on a regional scale.

Locally, project implementation could cause violations of air quality standards around points of traffic congestion (called "hot spots"). A hot spot analysis is generally required if daily project-related CO emissions exceed 550 pounds per day, or if they cause intersection levels of service to substantially worsen at intersections that already operate at a degraded level of service. Neither criterion is met for the proposed project. CO emissions will be 26 percent of the 550 lb/day threshold. Any level of service degradation will be small (< 5 seconds change in intersection delay) except along Carmel Valley Road close to the project site. No CO hot spot analysis is therefore required because no significance thresholds are exceeded that would trigger the requirement for such an analysis.

Less than Significant Impact - Emission of Other Criteria Pollutants and/or Odor Generation: Projects that emit other criteria pollutants could have a significant impact if total emissions cause or substantially contribute to violation of state or federal AAQS. Projects, which have the potential to emit toxic air contaminants could also result in significant air quality impacts.

Projects that could emit pollutants associated with objectionable odors in substantial concentrations could also result in significant impacts if odors would cause injury, nuisance, or annoyance to considerable numbers of people, or would endanger the health or safety of the public. Because people have varying reactions to odors, the nuisance level of an odor can be difficult to identify.

If the project constructs an onsite wastewater treatment facility, such a facility could be a source of potential nuisance odors. Spare equipment and system redundancies are normally included in modern treatment plant designs to assure continuous operations.

The treatment system will be a fully-enclosed package system, in which all gases generated during the treatment process will be confined below the floor deck and deodorized prior to discharge. A

plant control system will monitor the status and performance of the treatment process at all times. These measures will insure that odor from the onsite wastewater treatment plant will be a less than significant impact.

Additionally, the onsite equestrian facility will continue to operate. Odor characteristics of the facility will not change from existing conditions. Future residences will be located sufficient distances so as not to be significantly affected by any odors generated by the equestrian facility operations. The nearest residential lots (59 and 60) are located approximately 50 feet, upgradient and across the proposed West September Ranch Road. Odor impacts are not anticipated to be significant.

Consistency with Relevant Plans and Policies

The following Carmel Valley Master Plan (CVMP) policy is applicable to the proposed project:

CVMP Policy 20.2.7.1: At least one station to monitor air quality shall be maintained in Carmel Valley. Whenever records for August, September, and October of a given year include 15 hours (or more) of 0.1 ppm (or more) of oxidants (ozone), the County shall immediately hold public hearings to consider limitation of further development in the Master Plan area.

Consistency Analysis: According to data from the local air quality monitoring station, only one measurement in the last five years exceeded a state ambient air quality standard. No federal standards were exceeded in the last five years of published data (final 2002 data has not been released). The one violation of the state PM-10 standard was likely associated with the Los Padres National Forest wild fires, which is not considered representative of "normal" ambient conditions in the project area. The proposed project will contribute to air emissions within the project area; however, the project's contribution is considered to be less than significant and is not considered to be of a magnitude that will result in Carmel Valley exceeding ozone thresholds established in the CVMP.

4.8 Noise

Giroux & Associates prepared a noise assessment for the proposed project, which is summarized below and can be found in its entirety in Appendix G of this Draft REIR.

4.8.1 Environmental Setting

Noise Setting

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. Noise is generally defined as unwanted sound. Sound is characterized by various parameters, which describe the rate of oscillation of sound waves, the distance between successive troughs and crests, the speed of propagation, and the pressure level or energy content of a given sound wave. In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level.

The unit of sound pressure in relation to the faintest sound detectable by a human ear is called a decibel (dB). Since the human ear is not equally sensitive to all sound frequencies within the spectrum, noise levels at maximum human sensitivity are factored more heavily into sound descriptions in a process called A weighting (dBA). Within this section, further reference to decibels is understood to be A-weighted.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called Leq) or, alternatively, as a statistical description of the sound pressure level exceeded over some fraction of a given observation period. Additionally, since community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law requires that for planning purposes an artificial dB increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL).

The State of California Noise Insulation Standards (California Code of Regulations, Title 24, Part 6, Section T25-28) mandates an interior CNEL of 45 dB for single and multiple family dwellings. Since normal noise attenuation within residential structures with closed windows is 20 dB, and exterior noise level is 65 dB, CNEL is generally the noise/land use compatibility guideline for new residential dwellings. However, the County of Monterey has adopted a modified version of the State Guidelines. Table 4.8-1 identifies the matrix of noise exposures considered acceptable for various land uses. Normally, compatible noise levels for proposed noise sensitive land uses (residential, recreation, etc.) extend up to 70 dB CNEL. Although 70 dB CNEL is considered compatible, the County policy is to mitigate exterior noise exposure in areas of noise sensitive land uses to 65 dB CNEL where feasible. In semi-rural environments, an exterior noise level of 60 dB CNEL is considered the most desirable in any usable outdoor space.

Table 4.8-1: County of Monterey Exterior Community Noise Land Use Compatibility

Land Use Category	Noise Ranges (Ldn or CNEL) dB			
	I	II	III	IV
Passively Used Open Space	50	50-55	55-70	70+
Auditoriums, concert halls, amphitheaters	45-50	50-65	65-70	70+
Residential - low density single-family, duplex, mobile homes	50-60	60-70	70-75	75+
Residential multi-family	50-60	60-70	70-75	75+
Transient lodging - motels, hotels	50-60	60-70	70-80	80+
Schools, libraries, churches, hospitals, nursing homes	50-60	60-70	70-80	80+
Actively used open spaces-playgrounds, neighborhood parks	50-67	—	67-73	73+
Golf courses, riding stables, water recreation, cemeteries	50-70	—	70-80	80+
Office buildings, business commercial and professionals	50-67	67-75	75+	—
Industrial, manufacturing, utilities, agriculture	50-70	70-75	75+	—

Noise Range I: Normally Acceptable. Specific land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Noise Range II: Conditionally Acceptable. New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Noise Range III: Normally Unacceptable. New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Noise Range IV: Clearly Unacceptable. New construction or development should generally not be undertaken.
Source: Giroux & Associates, October 2003.

Existing Noise Levels

Noise generated from traffic along Carmel Valley Road is the predominant source of noise within the project area. In order to document the existing baseline noise levels, onsite noise measurements were conducted in January 2003 at two locations on and near the project site. The results of the noise monitoring are presented in Table 4.8-2.

Table 4.8-2: Ambient Noise Monitoring Summary

	Leq	Lmax	Lmin	L10	L50	L90
Fence behind stock pond[1]	58	66	40	61	57	44
50 feet to centerline[2]	65	77	42	68	62	51

[1] 260 feet to Carmel Valley Road centerline, near equestrian center
[2] At curve in road, moderately shielded field of view
Source: Giroux & Associates, October 2003

Past monitoring experience indicated that the daytime short-term Leq and weighted 24-hour CNELs are similar with CNEL typically 2 dB higher than Leq. Existing baseline noise levels near the equestrian center are near 60 dB CNEL.

4.8.2 Project Impacts

Two characteristic noise sources are typically identified with land use intensification such as that planned for the proposed September Ranch Subdivision project. Initially, construction activities, especially heavy equipment, will create short-term noise increases near the project site.

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant noise impact if it will result in:

- Exposing persons to generation of noise levels in excess of standards established in the Carmel Valley Master Plan or County noise ordinance, or applicable standards of other agencies;
- Expose persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- A substantial temporary or periodic increase in ambient noise levels in the vicinity above levels without the project.

It should be noted that the terms "excessive" and "substantial" are not defined; therefore, noise level increases are considered excessive or substantial if they violate standards or measurably increase the noise level in an area that is already in violation of standards.

Less than Significant Impact - Short-Term Construction-Related Noise: Construction activities, especially from heavy equipment, may create substantial short-term noise increases near the project site. Such impacts might affect nearby noise-sensitive receptors. Construction periods will be of short duration, and with limited physical improvements planned for the site. The intensity of construction activities will be no more severe than historic heavy equipment operations on the project site. Moreover, there is considerable setback from anticipated onsite construction and existing offsite residences. Topographical screening will also reduce offsite impact potential. The primary source of construction noise impact would likely occur when a new onsite residence is constructed adjacent to a completed and occupied home.

The most noise-intensive period will be when scrapers and dozers will move quantities of earth and rough grades are established for proposed homes and project infrastructure. Equipment noise will reach 90 dB at a distance of 50 feet when it operates under full load. Under normal atmospheric spreading losses, peak levels up to 65 dB may be heard as far as 1,000 feet from the operating equipment. A level of 65 dB is considered intrusive in normal conversation. Construction activity impacts during the noisiest activities could thus extend as far as 1,000 feet from the activity.

However, irregular terrain will limit the extent of any construction noise envelope to well below its theoretical maximum.

Noise impacts will be significant if they cause a violation of any adopted standards. There are no specific performance standards in the County Code that apply to construction. Such activities are exempt from compliance with numerical noise ordinance standards if the activity occurs during less noise-sensitive hours. Construction noise impacts are thus minimized by time restrictions placed on grading permits. Time limits on construction involving the operation of heavy equipment will be restricted to the limitations set forth in the CVMP, which restricts noise generating construction activities to the hours of 8 AM and 5 PM Monday through Friday. Compliance with these limits, as required is considered to result in a less than significant, temporary, noise impact during construction activities.

Potentially Significant (Noise Impact 1) - Long-Term Vehicular Generated Noise: Upon completion, traffic associated with the September Ranch Subdivision project will cause an incremental increase in area-wide noise levels throughout the Carmel Valley area. Traffic noise impacts are generally analyzed both to insure that the project will not adversely impact the acoustic environment of the surrounding community, and to insure that the project site is not exposed to an unacceptable level of noise resulting from the ambient noise environment acting upon the project. The proposed project will add approximately 1,000 vehicle trips to the area-wide circulation system. These trips will be concentrated along Carmel Valley Road, and gradually disperse to progressively lower volumes farther away from the site. Noise levels are logarithmic; therefore, it requires a doubling of volumes to raise noise levels by a significant amount. If a road is already carrying enough traffic to create a noise impact, any single project typically does not add enough traffic to cause an individually significant noise impact. Most offsite traffic noise impacts are, therefore, cumulative in nature. A project traffic noise impact analysis was conducted by calculating noise levels for various traffic scenarios based upon traffic volumes forecast in the project traffic study. Vehicle mixes and speeds observed during onsite monitoring, were used in the noise impact comparison along Carmel Valley Road and SR 1. Lower truck volumes and reduced travel speeds were assumed on residential side streets. This analysis was conducted using the California Specific Vehicle Noise Curves (CALVENO) in the federal roadway noise model (the FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108). The model calculates the Leq noise level for a particular reference set of input conditions, and then makes a series of adjustments for site-specific traffic volumes, distances, speeds, or noise barriers.

Table 4.8-3 shows the calculated CNEL at a 50-foot reference distance from the centerline of 27 area roadway segments.

Table 4.8-3: Noise Impact Analysis

Segment	Existing CNEL	Existing Plus Project
Serra Ave.		
West of SR-1	66.8	66.8

Table 4.8-3 (Cont.): Noise Impact Analysis

Segment	Existing CNEL	Existing Plus Project
Carpenter St.		
East of SR-1	57.2	57.2
Ocean Ave.		
West of SR-1	66.0	66.1
Carmel Hills Dr.		
East of SR-1	62.0	62.1
Rio Road		
West of SR-1	66.3	66.3
East of SR-1	68.1	68.2
Carmel Valley Road		
SR-1-Carmel Knolls Dr.	72.9	73.0
East of Carmel Knolls	73.3	73.5
West of Rancho San Carlos	71.8	71.9
Rancho San Carlos-Canada Way	71.4	71.6
Canada Way-Brookdale Dr.	71.4	71.6
East of Brookdale Dr.	71.4	71.5
West of Dorris Dr.	70.5	70.6
East of Dorris Dr.	69.6	69.7
West of Laureles Grade	68.8	68.8
East of Laureles Grade	68.6	68.7
SR-1		
North of Carpenter St.	76.2	76.2
Carpenter-Carmel Hills Dr.	74.9	74.9
Carmel Hills Dr.-Carmel Valley Rd.	74.6	74.7
Carmel Valley Rd.-Rio Rd.	70.2	70.2
South of Rio Rd.	67.5	67.6
Carmel Knolls Dr.		
North of Carmel Valley Rd.	54.9	54.9

Table 4.8-3 (Cont.): Noise Impact Analysis

Segment	Existing CNEL	Existing Plus Project
Carmel Rancho Blvd.		
South of Carmel Valley Rd.	68.0	68.0
Rancho San Carlos		
South of Carmel Valley Rd.	59.8	59.8
Brookdale Dr.		
South of Carmel Valley Rd.	48.0	48.0
Dorris Dr.		
South of Carmel Valley Rd.	61.9	62.0
Laureles Grade		
North of Carmel Valley Rd.	62.3	62.5
Measured at 50 feet from each roadway centerline. Source: Giroux & Associates, October 2003.		

The largest noise increase directly related to the project is +0.2 dB along Carmel Valley Road near the project site. The proposed project will not contribute to any significant increase in area-wide noise levels. Changes in project-related traffic noise will be less than the 1.5 dB threshold of human perception even under instantaneous laboratory conditions, much less in an ambient environment over a span of years.

Under a direct line-of-sight (180 degree roadway view), the distance to the 65 dB CNEL (acceptable exterior) and 60 dB CNEL (most desirable exterior) are as follows for acoustically "soft" propagation conditions:

65 dB CNEL distance = 155 feet to centerline
60 dB CNEL distance = 335 feet to centerline

The distance to the inclusionary housing is 250 feet. The distance from the nearest building pad to the centerline is over 700 feet. All single-family residential lots will have future noise levels of less than 60 dB CNEL. However, the inclusionary housing units may experience exterior noise exposure levels in the 60 to 65 dB CNEL range; thus, the inclusionary housing units may experience noise impacts.

The noise standard for the equestrian center is 70 dB CNEL. The 70 dB CNEL contour will be 72 feet from the Carmel Valley Road centerline at buildout conditions. No equestrian facilities are proposed within 72 feet of the roadway centerline that will be impacted by traffic noise.

Mitigation Measures

4.8-1: The southern facade of the inclusionary housing units shall have no balconies or decks facing Carmel Valley Road unless the perimeter of such balconies or decks are shielded by a five-foot high glass or transparent plastic barrier.

4.8-2: Habitable rooms of the inclusionary housing units that face south shall have a source of supplemental ventilation to allow for window closure in such rooms.

Implementation of these mitigation measures will reduce long-term noise impacts to less than significant.

Monitoring Action

Prior to the issuance of building permits, the project applicant shall submit the final design plans to the County of Monterey Planning and Building Inspection Department for review and approval.

Consistency with Relevant Plans and Policies

The following policies contained within the Carmel Valley Master Plan (CVMP) apply to the proposed project:

CVMP Policy 22.2.1.1: Where development is proposed in a conditionally acceptable noise environment, construction shall be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Multi-family housing proposed where the Ldn exceeds 60 dB shall provide a report per the requirements of Title 24 of the California Administrative Code delineating how interior noise levels would be reduced to an Ldn (or CNEL) of 45 dB or less.

CVMP Policy 22.2.4.1: Noise generating construction activities should be restricted to the hours of 8 AM and 5 PM Monday through Friday, where such noise impacts would impact existing development. All construction equipment utilizing internal combustion engines shall be required to have mufflers, which are in good working condition. An exception to the above stated hours and days of operation is to be allowed for heavy equipment and other noise generating equipment operating to protect life and property in emergency conditions, such as fire, flood, or seismic emergencies.

Consistency Analysis: Consistent with the CVMP, noise impact analysis has been prepared for the proposed project, identifying measures, which will be required for the project to meet the noise level requirements set forth in the CVMP. In addition, excluding the inclusionary housing units, the considerable setback from onsite construction and existing nearby sensitive receptors (residential units) is anticipated to reduce construction-related noise impacts in the initial phase of development. However, impacts may occur from haul trips and the construction of access roads. Moreover, once the first phase is completed and occupied, there is the potential for onsite construction-related impacts. Therefore, as required and consistent with the CVMP, noise generating construction activities will be restricted to the hours between 8 AM and 5 PM, Monday through Friday.

4.9 Biological Resources

MBA prepared an updated Biological Resources Assessment (BRA) for the Draft REIR, which is summarized within this section. In addition, MBA reviewed past biological resources documentation which was prepared for the previous EIR, including the *Updated Biological Surveys for September Ranch, Monterey County, CA* (Zander Associates 2002), *Supplemental Forestry Report of August 2002 to the Forestry Management Plan for September Ranch, prepared by Hugh Smith, dated May 10, 1995* (Staub 2002), *Final Environmental Impact Report Volume 2 - Supplemental Information in Response to Additional Public Comments* (Denise Duffy and Associates 1998), *September Ranch in Carmel Valley, Monterey County, CA - Smith's Blue Butterfly Survey in 2001* (Entomological Consulting Services 2001), *September Ranch in Carmel Valley, CA - Smith's Blue Butterfly Survey in 1996* (Entomological Consulting Services 1996), *September Ranch in Carmel Valley, CA - Smith's Blue Butterfly in 1995* (Entomological Consulting Services 1995), *Forest Management Plan for Residential Subdivision* (Smith 1995), *Morgens Property Special Status Plants Assessment* (Mori 1995a), *Morgens Property Biotic Assessment Carmel Valley, California* (Mori 1995b), *Biological Resource Assessment, Morgens Property, Carmel Valley, California* (Zander Associates 1995), *Morgens Ranch Biological Survey* (WESCO 1981), and comments from the USFWS (USFWS 1997), CDFG (CDFG 2003E), the Monterey Pine Forest Watch (Smith 2003) and the California Native Plant Society Monterey Bay Chapter (Matthews 2003)**.**

In addition plant surveys were conducted in February 1981 (WESCO 1981), November 1992 and January 1995 (Mori 1995a), March 1995 (Mori 1995b), April 1995, May 1995, and June 1995 (Zander 1995), April 2001, May 2001, and August 2001 (Zander 2002). Appendix A of Appendix H of this REIR contains the special status plant table, which provides a synopsis pf when the surveys were conducted and the findings of those surveys.

4.9.1 Environmental Setting

Existing Conditions

The study area is located within the North Coast Bioregion (Welsh 1994). This bioregion is located within the northern California coastal region and extends north as far as Mendocino County and south as far as Monterey County. Habitats within this bioregion are typical of a Mediterranean climate and include both mesic (moist) habitats, such as redwood forest, and xeric habitats, such as coastal scrub. The Monterey area is defined by the Pacific Ocean and the Santa Lucia coastal mountain range and has an annual winter precipitation average of 17.23 inches (Western Regional Climate Center 2003).

Located approximately 2.5 miles east of the Pacific Ocean, and 11 miles north of Los Padres National Forest, the September Ranch Subdivision project study area is located within the Carmel Valley, north of Saddle Mountain. The roughly rectangular-shaped study area is located within the central portion of the Seaside 7.5-minute topographic quadrangle, within

Township 15S and Range 1E. The study area is located on the southern border of Jacks Peak County Park, and east of Roach Canyon, approximately 0.35 miles north of the Carmel River.

The 1,673-acre biological resources study area ranges in elevation from 70 to 976 feet above sea level. The south-facing hillsides support six ephemeral drainages that lack defined beds or banks and have no visible scouring marks (Denise Duffy and Associates 1997). No hydrophytic vegetation was observed within the drainages and the overhead canopy consists of coast live oak forest.

Included in the 891-acre project area are approximately 24.2 acres occupied by an existing equestrian center and adjacent horse pastures. For several decades, cattle-grazing has been conducted within the proposed project area.

Vegetation Communities

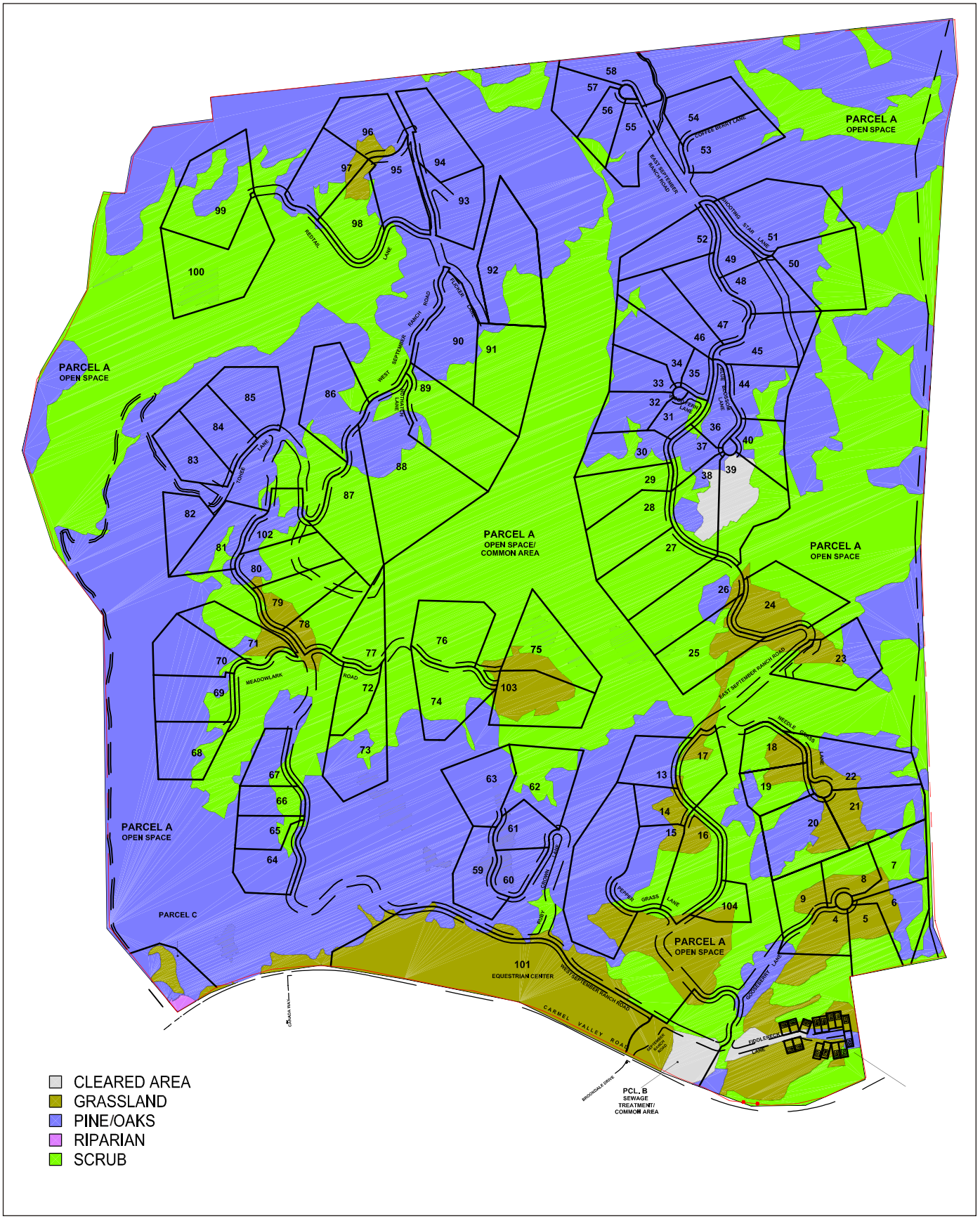
The 891-acre project area supports a variety of vegetation communities, including native Monterey pine forest/mixed oak woodland, native and non-native grasslands, and coastal scrub. A small area of the western portion of the site supports riparian habitat. Following is a discussion of the native plant communities/habitat types found on the project site as described in the studies and site visits referenced previously. Exhibit 4.9-1 identifies where these native plant communities/habitat types occur on the site. In addition, Table 4.9-1 presents the acreage of each of the vegetation communities within the 891 acres proposed for development.

Table 4.9-1: Acreages of Vegetation Communities within the Project Area

Vegetation Community	Acreage
Monterey Pine/Coast Live Oak Forest	426.00
Coastal Scrub	378.00
Grassland	62.00
Willow Riparian Scrub	0.77
Equestrian Center	24.23
Total Acreage	**891.00**
Source: Whitson Engineers, September 2003.	

Monterey Pine/Coast Live Oak Forest

Monterey pine/coast live oak forest covers 426 acres (47 percent) of the project site as illustrated in Exhibit 4.9-1. The Monterey pine (*Pinus radiata*) and coast live oak (*Quercus agrifolia*) vary in relative abundance and cover, with the oaks dominant along the lower southern slopes and the pines dominant on the higher ridges to the north (Denise Duffy and Associates 1998). The southern slopes support the largest oaks on the property. The



Source: Michael Brandman Associates, January 2004.

NORTH

Michael Brandman Associates

Exhibit 4.9-1
Vegetation Map

pine/oak forest understory is generally open and consists of grasses such as leafy bentgrass (*Agrostis diegoensis*) and western wildrye (*Elymus glaucus*), as well as scattered shrubs, including poison oak (*Toxicodendron diversilobum*), bush monkey flower (*Diplacus aurantiacus*), goldenbush (*Hazardia squarrosa*), and redberry (*Rhamnus crocea*). Stands of the invasive French broom (*Genista monspessulana*) comprise the understory primarily on the southern half of the project site.

Although Monterey pines are widely planted throughout the region, there are three native stands of the species remaining on the California coast at Point Año Nuevo, (Santa Cruz and San Mateo counties) in Cambria (San Luis Obispo County) and on the Monterey Peninsula (Monterey County).

Coastal Sage Scrub

Coastal sage scrub covers approximately 380 acres of the project site; as illustrated in Exhibit 4.9-1, this habitat type is found on the steep, exposed, arid slopes of the site. The dominant plant species include California sage (*Artemisia californica*), coyote brush (*Baccharis pilularis*), bush monkey flower (*Diplacus aurantiacus*), black sage (*Salvia mellifera*), goldenbush (*Hazardia squarrosa*), and redberry (*Rhamnus crocea*). On the western portion of the project site where the canyons are more mesic, the scrub vegetation is very dense and tall and consists of poison oak (*Toxicodendron) diversilobum*) and coffee bean (*Rhamnus californicus).* Blue blossom (*Ceanothus thyrsiflorus*), cream bush (*Holodiscus discolor*) and California blackberry (*Rubus ursinus*) are also present on the western portion of the project site.

Grasslands

Grasslands encompass approximately 62 acres of the property and account for most of the plant diversity on the site; over 240 different species, of both native and non-native grasslands were identified during the November 1994 and March 1995 surveys (Zander Associates 1995). Non-native annual grassland is generally found in open areas in valleys and foothills throughout coastal and interior California (Holland 1986). It typically occurs on soils consisting of fine-textured loams or clays that are somewhat poorly drained. This vegetation type is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, that have replaced native perennial grasslands as a result of human disturbance. Scattered native wildflower species representing remnants of the original vegetation may also be common if an area is grazed. Within the project area, both non-native and native grasslands occur.

Non-Native Grasslands. Non-native grasslands are annual grasslands that support introduced species such as ripgut brome (*Bromus diandrus*), red brome (*B. rubens*), soft chess (*B. hordeaceus*), and Mediterranean barley (*Hordeum hystrix*).

Native Grasslands. Native grasslands are perennial grasslands that support purple needlegrass (*Nasella pulchra*), small-flowered needlegrass (*Nasella lepida*), pine bluegrass (*Poa secudna*), and California oatgrass (*Danthonia californica*). Some of the grassland areas on the site have a higher diversity of native grasses and flowering herbs than previously reported. The native flowering herbs identified include: Johnny jump-up (*Viola pedunculata*), suncups (*Camissonia ovata*), shooting star (*Dodecatheon clevelandii*), checkerbloom (*Sidalcea malvaeflora*), blue-eyed grass (*Sisyrinchium bellum*), buttercup (*Ranunculus californicus*), owl's clover (*Castilleja* spp.), clover (*Trifolium* spp.), California poppy (*Eschscholzis californica*), Mariposa lily (*Calochortus luteus*), sky lupine (*Lupinus nanus*), and blue dicks (*Dichelostemma capitatum*).

Willow Riparian

Riparian vegetation is generally absent from major drainages on the project site. The drainages on the site are ephemeral, lack defined beds or banks, and do not exhibit observable scour. The survey conducted in January 1995, a very wet year, confirmed that these drainages do not appear to convey significant storm flows and do not support hydrophytic (moisture-tolerant) vegetation. A narrow strip of riparian vegetation (approximately 0.7 acres) consisting primarily of willow (*Salix* sp.) was observed at the base of Roach Canyon along Carmel Valley Road. Because the grade of Carmel Valley Road is higher than the bed of Roach Canyon, surface and/or subsurface flows may drain to the culverts beneath Carmel Valley Road thereby providing sufficient moisture to allow for the establishment of these willows. However, no pooling or ponding of water was observed in this area during the January 1995 survey. Other plant species observed with the willow include poison oak, creek gooseberry, mugwort (*Artemisia douglasiana*), greater periwinkle (*Vinca major*), and hedge-nettle (*Stachys albens*).

Wildlife Habitats

Several wildlife habitats, which include vegetation communities and anthropogenic structures, occur within the 1,673-acre study area; however, the descriptions below pertain only to those habitats that are within the 891-acre project area.

Monterey Pine/Mixed Oak Woodland

Monterey pine and oak woodlands are important habitats for many bird and animal species since they provide a valuable food source (acorns), as well as potential sources of shelter (tree cavities, fallen woody debris). Woody debris from oak and pine trees contribute to the structural complexity of the forest floor and allow for development of micro-climates suitable for amphibians and reptiles. Important understory plants in woodlands include poison oak, redberry, brittle-leaf manzanita (*Arctostaphylos tomentosa*), and creeping snowberry (*Symphoricarpos mollis*), which provide seasonal food sources for birds and mammals. Pines provide nuts for a variety of birds and small mammals as well and because the trees are short-lived, the older representative animal species of Monterey pine dominated forests

include hairy woodpecker (*Picoides villosus*), Stellar's jay (*Cyanositta stellen*), brown creeper (*Certhia americana*), pygmy nuthatch (*Sitta pygmaea*), and pine siskin (*Carduelis pinus*).

Representative animal species of oak dominated forests include arboreal salamander (*Aneides lugubris*), southern alligator lizard (*Gerrhonotus multicarinatus*), common kingsnake (*Lampropeltis getulus*), western screech owl (*Otus kennicottii*), scrub jay (*Aphelocoma corulescens*), Virginia opossum (*Didelphis virginianus*), dusky footed woodrat (*Neotoma fucipes*), Merriam's chipmunk, western gray squirrel (*Sciurus griseus*), and black-tailed deer.

Coastal Sage Scrub

The coastal sage scrub is relatively dense throughout the project site in the more open or disturbed areas associated with the trail/road cuts or rock outcrops. The thick scrub provides valuable cover and nesting habitat for animal species, with the more open areas providing valuable foraging habitat. Rock outcrops and talus (e.g., slope formed from rock debris) found within this community provide valuable denning, cover, and roosting habitat as well. Animal species common to this habitat include western fence lizard (*Sceloporus occidentalis*), western rattlesnake (*Crotalus viridis*), California whipsnake (*Masticophis lateralis*), blue-gray gnatcatcher (*Potopfila caerulea*), wrentit (*Chamae fasciata*), Bewick's wren (*Thryomanes bewickii*), brush rabbit (*Sylvilagus bachmanii*), California mouse (*Peromyscus californicus*), and gray fox (*Urocyon cinereoargentus*). Pines provide nuts for a variety of birds and small mammals as well and because the trees are short-lived, the older senescent trees provide an important resource for woodpeckers, which prefer to excavate in dead or dying trees.

Grassland

Grassland habitat, including the non-native grasslands present onsite, attracts reptiles, such as northern alligator lizard (*Gerrhonotus multicarinatus*), and western fence lizard (*Sceloporus occidentalis*), which feed on invertebrates found beneath debris in the vegetation community. This habitat also attracts avian seed-eating and insect-eating species of birds and mammals. California quail (*Lophortyx californicus*), mourning dove (*Zenaidura macroura*), and meadowlark (*Sturnella neglecta*) are a few seedeaters that nest and forage in grasslands. Insect-eaters such as scrub jays (*Aphelocoma coerulescens*), barn swallows (*Hirundo rustica*), and mockingbirds (*Mimus polyglottus*) use the habitat for foraging only. Grasslands are important foraging grounds for aerial and ground foraging insect-eating bat species such as myotis (*Myotis* spp.) and pallid bat (*Antrozous pallidus*). A large number of other mammal species such as California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), and black-tailed jackrabbit (*Lepus californicus*) also forage and nest within grasslands. Small rodents attract raptors (birds of prey) such as owls that hunt at night, as well as day-hunting raptors such as red-tailed hawks (*Buteo jamaicensis*), and white-shouldered kites (*Elanus leucurus*), among others. Mammals that have habituated to

the presence of human habitation, such as raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), and opossum (*Didelphis virginiana*), frequently use the site, as was evidenced by the presence of scat.

Willow Riparian

The wildlife value of riparian habitats is generally considered high due to the presence of shrubs and trees that provide cover for animals in an area adjacent to a water source. Animal species that are common to riparian habitats include song sparrow (*Melospiza melodia*), Wilson's warbler (*Wilsonia pusilla*), and ornate shrew (*Sorex omatus*). The riparian habitat on the project site has moderate wildlife value due to its limited distribution and coverage, lack of surface water, and close proximity to Carmel Valley Road.

Structures

Bird species including passerines, such as black phoebe (*Sayornis nigricans*), and raptors, such as American kestrel (*Falco sparverius*), may use onsite anthropogenic structures such as the horse barn and residential house. These bird species have adapted to disturbances associated with human settlements and will nest and forage in close proximity to humans. In general, the nesting season for both passerines and raptors typically begins at the end of February and may last to mid-August. Several bat species, including Mexican free-tailed bat (*Tadarida braziliensis mexicana*) and pallid bat (*Antrozous pallidus*), could potentially use the barn structure for day or night roosting, or as a hibernaculum.

Wildlife Movement Corridors

Wildlife movement includes migration (i.e., usually one way per season), inter-population movement (e.g., long-term genetic flow) and small travel pathways (e.g., daily movement corridors within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities such as foraging or escape from predators, they also provide connection between outlying populations and the main corridor, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles between primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement among populations located in discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape results in wildlife populations that consist of discrete sub-populations comprising a large single population, which is often referred to as a meta-population. Even where patches of pristine habitat are fragmented, which occurs with coastal scrub, the movement between wildlife populations is facilitated through habitat linkages, migration corridors, and movement corridors. Depending on the condition of the corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Potentially low frequency genetic flow may lead to complete isolation, and if pressures are strong, potential extinction (McCullough 1996; Whittaker 1998).

The open space available within the 1,673-acre study area provides a movement corridor for a variety of common wildlife species, such as raccoons, opossums, and skunks, within the local vicinity of the project area, as evidenced by various scat observed. The value of the movement corridor from the open habitats in the north, such as the Jacks Peak County Park area, and in the south, such as the Carmel River, is reduced by the existence of development immediately surrounding the Carmel River. Larger species, such as deer, would use the study area as a movement corridor and would not be impeded by the residential development. On the other hand, small species such as amphibians would find it difficult to move onto the site from the Carmel River due to the residential development and the debris-blocked culverts going under Highway 84.

Special Status Natural Communities and Species

Communities and species are designated as having special status due to their overall rarity, endangerment, restricted distribution, and/or unique habitat requirements. In general, special status is a combination of these factors. The Federal Endangered Species Act (FESA), enacted by Congress in 1973, outlines the procedures whereby species are listed as endangered or threatened and established a program for the conservation of such species and the habitats in which they occur. Many individual states have enacted their own listing procedures to provide for the protection of additional locally sensitive biological resources. The California Endangered Species Act (CESA) of 1984 amends the California Fish and Game Code to protect species deemed to be locally endangered.

Special Status Natural Communities

Special status natural communities are those that are considered rare, based on limited distribution in the region, but may or may not support special status plant or wildlife species. Special status natural communities may also receive regulatory protection (e.g., Section 404 of the Clean Water Act and/or the California Department of Fish and Game (CDFG) Section 1600 et seq. of the California Fish and Game Code). In addition, the California Natural Diversity Data Base (CNDDB) designated a number of communities as rare; these communities, such as coastal terrace prairie, are given the highest inventory priority (Holland 1986, CDFG 1999). Within the project site, two communities are classified as rare, the Monterey pine forest and the costal terrace prairie.

Monterey Pine/Coast Live Oak Forest. Monterey pine forest is dominated by Monterey pine (*Pinus radiata*) with continuous or intermittent canopies reaching 30 meters. Coast live oak (*Quercus agrifolia*) is usually the next most abundant species. This community typically occurs on well-drained sandy soils within the limits of the summer marine fog zone up to 980 feet in elevation. This community intergrades with other coastal closed-cone coniferous types (Holland 1986), such as upland redwood forest or Monterey cypress forest and bishop pine forest. Three natural areas of Monterey pine occur in the state, at Año Nuevo in San Mateo and Santa Cruz counties, Cambria in San Luis Obispo County, and along the Monterey Peninsula. There is a high level of variation in species composition among these

three areas (Sawyer and Keeler-Wolf 1995). It is hypothesized that there is a link between certain marine terrace conditions and the domination of Monterey pine that is typically a secondary species in other communities (Sawyer and Keeler-Wolf 1995).

Due to the limited distribution of native stands, the California Native Plant Society (CNPS) has designated native Monterey pines as sensitive plants (list 1B) which are considered rare by the Natural Diversity Data Base. Several threats have been identified that imperil these stands. The CNPS cites genetic contamination, development, and fragmentation as the key threats to these remaining native stands. Another threat is pine pitch canker (*Fusarium circinatum*), a fungal pathogen, that enters the tree through a wound caused mechanically, such as hail, wind stress, and various animals, including insects feeding (University of California Berkeley 2003). Monterey pine (*Pinus radiata*) is highly susceptible to this disease. The spores are spread by wind and rain splash, also by insects such as bark beetles. The fungus can grow and persist in soil and may sometimes act as a root infecting pathogen. It is also found in seeds and on seed coats. The fungus is able to survive for more than 12 months in logs, in resin impregnated tissues.

Within the project site, the majority of native Monterey pines occur at elevations greater than 300- feet above sea level. A total of 34.90 acres of Monterey pine/oak woodland forest have potential to be impacted through loss of individuals caused by road construction, installation of utilities and creation of building pads (Whitson Engineers 2003). The loss of individuals may increase the potential spread of pine pitch canker throughout the forest.

A supplemental forestry report, prepared in 2002, analyzed the presence and potential for pitch canker disease to occur onsite (Staub 2002). The Monterey pines evaluated within the 891-acre study area revealed only 7 individuals with visible symptoms (Staub 2002). All trees with symptoms were located in the lower portion of the property (below 250 feet), a finding that is consistent with research stating that pitch canker disease severity is highest at sea level (Staub 2002). For example, Jacks Peak County Park, located higher than 600 feet above sea level, has no trees with pitch canker symptoms (Staub 2002).

Coastal Terrace Prairie. Coastal terrace prairie, considered rare by the CNPS, is typically comprised of dense, tall grassland, typically dominated by both sod- and tussock-forming native perennial grasses. It is naturally patchy in occurrence and variable in composition reflecting differences in slope aspect, soil texture, and moisture availability. This vegetation community occurs on sandy loam soils of marine terraces near the coast and is restricted to cooler, more mesic sites within the zone of fog incursion. Although the coastal terrace prairie consists of many of the same native species that comprise valley/foothill needlegrass grassland, annual species are less important in community structure. It is distributed from Santa Cruz County to Oregon (Holland 1986) and its range closely matches that of northern coastal scrub (Holland and Keil 1990), with which it is generally associated. Coastal terrace prairie similarly has a long history of human disturbance and continues to be threatened by

including intensive livestock grazing, the introduction of invasive exotic species, changes in the fire regime, and development.

Within the 891-acre September Ranch Subdivision project area, 17.92 acres of grasslands, including native terrace prairie and non-native grasslands, have potential to be impacted by construction of roads, installation of utilities and creation of building pads.

Special Status Plant Species

Special status plant species include those listed as Endangered, Threatened, Rare or Candidates for listing by the USFWS (2003), the CDFG (2003a) and the CNPS (Skinner and Pavlik 1999). The CNPS listing is sanctioned by the CDFG and serves essentially as their list of "candidate" plant species. The CDFG also compiled a list of "Special Plants" (CDFG 2003a) that include California Special Concern species. These designations are given to those plant species whose vegetation communities are seriously threatened and those wildlife species whose breeding populations are in serious decline. Although these species may be abundant elsewhere, they are considered to be at some risk of extinction in California. Although Special Concern species are afforded no official legal status under FESA or CESA, they may receive special consideration during the planning stages of certain development projects and adverse impacts may be deemed significant under the California Environmental Quality Act (CEQA).

Based on a review of the California Natural Diversity Data Base (CNDDB 2003), and general knowledge of the flora of Monterey County, a total of 23 special status plant species were determined to have at least some potential for occurring in the project region. Focused surveys were conducted for eight species during their appropriate survey periods.

Below is a description of those species reported within the Seaside and Monterey topographic quadrangles, or within habitats present onsite, and their potential for occurrence in the September Ranch Subdivision project area.

Federal and State Threatened and Endangered Species. It was initially determined that eight special status plant species had the potential to occur on the site, including Monterey pine (*Pinus radiata*), Hickman's onion (*Allium hickmani*), CNPS list 1B Gairdner's yampah (*Perideridia gairdnen*), CNPS list 4 Yadon's piperia (*Piperia yadoni*), federally endangered and CNPS List 1B Santa Cruz clover (*Trifolium buckwestorium*), CNPS list 1B Pacific Grove clover (*Trifolium polydon*), California rare and CNPS List 1B small-leaved lomatium (*Lomatium parvifolium*), and CNPS list 4 Adder's tongue (*Ophioglossum californicum*), (Denise Duffy and Associates 1998). Another federally-listed species addressed in this Draft REIR is the Monterey spineflower (*Chorizanthe pungens* var. *pungens*), a federally threatened and CNPS list 1B. Please refer to Appendix A of Appendix H of this REIR for a list of special status plant species and their survey dates.

Surveys were conducted in 1995 to determine the presence or absence of Yadon's piperia, Gairdner's yampah, and Hickman's onion (Denise Duffy and Associates 1998). Since the project site is occasionally grazed, surveys were conducted in March before the blooming period of these species but when characteristic vegetative parts would have been identifiable. Neither Yadon's piperia nor Hickman's onion were observed during the survey and it was concluded that neither would be expected to occur on the project site based on habitat characteristics. The small-leaved lomatium (*Lomatium parviflorum*) and Adders tongue (*Ophioglossum californicum*) were observed onsite (Denise Duffy and Associates 1998).

Survey results in March 1995 were negative for Gairdner's yampah, Santa Cruz clover, and Pacific Grove clover; subsequent surveys were conducted in April 1995, also with negative results (Denise Duffy and Associates 1998). Surveys conducted in May 1995 revealed a Pacific Grove clover and there is a possibility for isolated occurrences for the species on site (Denise Duffy and Associates 1998). However, surveys for Pacific Grove clover conducted in May and August 2001 revealed no occurrences of this species within the study area.

A reconnaissance-level assessment of Yadon's piperia was conducted throughout its range in the late/winter/spring months in 1996. Approximately 65 individuals of the species were reported on old road cuts in the Monterey pine forest/chaparral ecotone on the slopes below Jacks Peak. While the record of this location is not specific, the observation of Yadon's piperia on the slopes of Jacks Peak in the vicinity of the September Ranch Subdivision project site is not surprising given the general trend of increased numbers of Yadon's piperia observed due to a greater number of survey efforts.

The USFWS comments on the September Ranch EIR included a note that Yadon's piperia has been reported on or near the project site (USFWS 1997). This reference may be addressing the Yadon's piperia surveys conducted by Mr. David Allen in 1995 and 1996. Surveys were conducted throughout its known distribution and the species was found at a site in the vicinity of Jacks Peak; however, the precise location was not recorded. A September Ranch project survey in 1995 did not detect any individual plants within the project area.

A total of three special status plant species were observed on the project site: small-leaved lomatium, California Adders tongue, and Monterey pine. Although focused surveys were conducted for the remaining 5 species, Hickman's onion, Gairdner's yampah, Yadon's piperia, Santa Cruz clover, Pacific Grove clover, and Monterey clover, none of these species were observed. Repeated surveys by qualified botanists covering a representative area over a range of times and conditions on September Ranch has provided a level of effort that is required for a CEQA analysis and is sufficient to allow for the following conclusions:

1. The federally-listed plants identified above, specifically the Monterey clover and Yadon's piperia, were not found onsite during the surveys and therefore, none would be impacted by the project;
2. One population of Pacific Grove clover (CDFG Rare) is located onsite;

3. Native Monterey pine forest is present onsite and approximately 34.9 acres of Monterey forest/oak woodland will be impacted by the September Ranch Subdivision project;
4. California Adders tongue and small-leaved lomatium (CNPS List 1B) have been found on site.

An additional species that has the potential to occur onsite is the Monterey spineflower (*Chorizanthe pungens* var. *pungens*), federally-listed Threatened in 1994, and a CNPS List 1B species. This spineflower occurs in maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland on sandy soils at an elevation range of 3-450 meters. The blooming period for this annual herb is between April and June. No surveys for this species have been conducted to date; however, the County will require as a condition of project approval that the applicant commit in the tentative map process to conducting surveys for this species prior to the issuance of grading permits.

Other Special Status Plant Species. Several plant species were identified as potentially occurring onsite since the publication of the Final EIR. These species include Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*), Monterey manzanita (*Arctostaphylos montereyensis*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Hutchinson's larkspur (*Delphinium hutchinsoniae*), Eastwood goldenbush (*Ericameria fasciculate*), and Kellog's horkelia (*Horkelia cuneata* ssp. *sericea*) (CDFG 2003E).

Hooker's manzanita (*Arctostaphylos hookeri* ssp. *hookeri*), a CNPS List 1B species, occurs in various and somewhat xeric communities, such as closed-cone coniferous forest, chaparral, cismontane woodland and coastal scrub on sandy soils at an elevation range between 85-300 meters. The blooming period for this evergreen shrub is between January and June. No surveys for this species have been conducted to date; however, the County will require as a condition of project approval that the applicant commit in the tentative map process to conducting surveys for this species prior to the issuance of grading permits.

Monterey manzanita (*Arctostaphylos montereyensis*), a CNPS list 1B species, occurs in maritime chaparral, cismontane woodland, and coastal scrub communities on sandy soils at an elevation range of 30-730 meters. The blooming period for this evergreen shrub is between February and March. No surveys for this species have been conducted to date; however, the County will require as a condition of project approval that the applicant commit in the tentative map process to conducting surveys for this species prior to the issuance of grading permits.

Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), a federal Species of Concern and CNPS List 1B species, occurs in valley/foothill grasslands and alkaline soils. This perennial herb blooms June through November. This species was assessed (Zander Associates 2002) for occurrence but no focused surveys were conducted. The County will require as a

condition of project approval that the applicant commit in the tentative map process to conducting surveys for this species prior to the issuance of grading permits.

Hutchinson's larkspur (*Delphinium hutchinsoniae*), a CNPS List 1B species, occurs in broadleaf upland forests, chaparral, coastal prairie and coastal scrub communities. This perennial herb blooms in March and June. This species was assessed for occurrence (WESCO 1981) but no focused surveys were conducted. The County will require as a condition of project approval that the applicant commit in the tentative map process to conducting surveys for this species prior to the issuance of grading permits.

Eastwood goldenbush (*Ericameria fasciculate*), a CNPS List 1B species, occurs in closed-cone coniferous forest, maritime chaparral, coastal dunes and coastal scrub communities on sandy soils in openings of the scrub at an elevation range of 30-275 meters. The blooming period for this evergreen shrub is between July and October. No surveys for this species have been conducted to date. The County will require as a condition of project approval that the applicant commit in the tentative map process to conducting surveys for this species prior to the issuance of grading permits.

Kellogg's horkelia (*Horkelia cuneata* ssp. *sericea*), a CNPS List 1B species, occurs in closed-cone coniferous forest, maritime chaparral and coastal scrub communities on sandy or gravelly soils in openings of the scrub at an elevation range of 10-200 meters. This perennial herb blooms between April and September. No surveys for this species have been conducted to date. The County will require as a condition of project approval that the applicant commit in the tentative map process to conducting surveys for this species prior to the issuance of grading permits.

Special Status Wildlife Species

Special status animal species include those listed by NOAA Fisheries, the United States Fish and Wildlife Service (USFWS 2003) and the CDFG (2003b, 2003d). The USFWS and NOAA Fisheries officially list species as either Threatened, Endangered, or as candidates for listing. Additional species receive federal protection under the Bald Eagle Protection Act (e.g., bald eagle, golden eagle) and the Migratory Bird Treaty Act (MBTA). In addition, many other species are considered by the CDFG to be species of special concern; these are listed in Remsen (1978), Williams (1986), and Jennings and Hayes (1994). Although such species are afforded no official legal status, they may receive special consideration during the planning stages of certain development projects. The CDFG further classifies some species under the following categories: "fully protected," "protected fur-bearer," "protected amphibian," and "protected reptile." The designation "protected" indicates that a species may not be taken or possessed except under special permit from the CDFG, "fully protected" indicates that a species can be taken for scientific purposes by permit only.

A total of 32 special status animal species have been recorded in the region and/or may be present within the project area. Of the 32 special status animal species, eight avian species

are considered to have a low potential to occur on the site, based on existing habitats. Please refer to Appendix B of Appendix H of this REIR for a list of special status animal species and their potential for occurrence.

Based on an assessment of habitat types within the project site and review of CNDDB records, Mori (1995b) identified 10 sensitive wildlife species with potential to occur in the site vicinity. These species include; Smith's blue butterfly (*Euphilotes enoptes smithii*), golden eagle (*Aquila chrysaetos*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*A. cooperii*), white-tailed kite (*Elanus leucurus*), purple martin (*Progne subis*), pallid bat (*Antrozous pallidus*), small-footed myotis (*Myotis ciliolabrum*), fringed myotis (*M. thysanodes*), long-legged myotis (*M. volans*), and Yuma myotis (*M. yumanensis*). In addition to these species, the Monterey dusky footed woodrat (*Neotoma fuscipes luciana*) could occur within the Monterey pine/coast live oak woodland on the site.

Federally Threatened and Endangered Animal Species. The following is a discussion of species that have the potential to occur onsite and/or are species that are prominent in today's regulatory environment, such as the California red-legged frog. This document does not address impacts to species that may occur in the region, if no habitat for the species occurs onsite.

Smith's Blue Butterfly (*Euphilotes enoptes smithi*). A federally Endangered species, historically ranging along the coast from Monterey Bay south through Big Sur to an area near Point Gorda, and occurring in scattered populations in association with coastal dune, coastal scrub, chaparral, and grassland habitats (Scott 1986). They spend their entire lives in association with two buckwheat plants *(Eriogonum parviflorum* and *E. nudum*). The larval plant is *E. parviflorum* and the adult host plant is *E. nudum* (Arnold 1996). Emerging in late summer and early autumn, the adults mate and lay eggs on the flowers of these host plants. The eggs hatch shortly thereafter and the larvae begin to feed on the plant flowers. Following several weeks of feeding and development, the larvae molt to a pupal stage, beginning a ten month period of transformation. The following year, as the *Eriogonum* again flower, the new adults emerge.

Individuals of dune buckwheat, a significant food source for the Smith's blue butterfly, were found within the developable portions of the project site and were mapped during the March 1995 survey. Scattered plants of the dune buckwheat host plant were observed on the project site primarily along an existing road cut on the eastern half of the project. Additionally, dune buckwheat plants mainly occurred along the existing access roads as single plants or small clumps of individuals. One population of buckwheat at the northwest comer of the site was located in an area away from the access road.

Approximately 28 locations of *E. parviflorum* were mapped onsite in 1995 (Entomological Consulting Services 1996). In 2001, these sites were reduced to 16 locations (Entomological Consulting Services 2001). These locations occur on Redtail Lane, Black Sage Lane, Meadowlark Road, West September Ranch Road, East September Ranch Road, and in

parcels 98, 95, 73, 40, 39, 26, 27, 20, and 9. However, three years of surveys conducted over a 7-year period revealed no adults or larvae onsite (Entomological Consulting Services 2001).

South/Central Coast steelhead (*Oncorhynchus mykiss irideus*). Ecologically Significant Unit, federally listed Endangered, encompasses coastal populations of winter steelhead from three tributaries to Monterey Bay (Pajaro, Salinas, and Carmel rivers) in the small streams of the Big Sur Coast and small intermittent streams if San Luis Obispo County, south to Point Conception (Moyle 2002). Winter steelhead adults enter streams from the ocean when rains have increased the stream flows (Moyle 2002). Spawning typically occurs in tributaries to mainstream rivers, after which they return to the ocean. A key characteristic of all breeding streams is cool temperatures, typically between 0º Celsius (winter) and 26º-27º C (summer) (Moyle 2002). Higher temperatures may reduce oxygen to levels that are not population sustaining. Different size classes require different microhabitats that are defined by depth, water velocity, substrate, and cover (Moyle 2002). For example, fry typically concentrate in areas with low velocity and shallow depths (<1.5 feet), juveniles occur in faster and deeper (1.5- to 3-foot) areas with more cover.

This species is known to occur in the Carmel River (CDFG 2003E); however, no suitable tributaries that could be used as migratory corridors for this species occur between the project site and the Carmel River. Yet the project will result in a water supply demand of 57.21 AF per year (see Section 4.3, Water Supply and Availability of this Draft REIR), which may indirectly affect steelhead populations if the project results in reduced flows within the Carmel River (i.e., through pumping from the September Ranch Aquifer[SRA]). Impacts on biological resources can be a result of a prolonged or permanent decrease in baseflow due primarily to prolonged drought condition. Since a river baseflow is directly proportional to the amount of surface outflow and that the volume of surface outflow in the CVA is much larger than the amount of groundwater diverted for use by the project, it follows that there would be an insubstantial change in the baseflow of the Carmel River due to the relatively small amount of loss from project usage. According to the National Marine Fisheries Service's (NMFS) technical report, *Instream Flow Needs for the Steelhead in the Carmel River* (2002), the amount of water available for flow is greater than 10,000 AF in an average water year. Dry years occur twenty percent of the time and water flow is then less than 1,000 AF. However, the NMFS report identifies that there should be no new diversions from the Carmel River during the low flow period between June 1st and October 31st. While connectivity is limited (see Section 4.3, Water Supply and Availability of this Draft REIR), the project will be required to withdraw only during the seven months outside of the low flow period. Thus, at a rate of 57 AF per year, this will result in a maximum project withdrawal of 8 AF per month, which will not affect the sustainability of steelhead populations. Therefore, no impacts, direct or indirect, to this species are expected from the September Ranch Subdivision project based on the lack of water drawdown of the Carmel River.

California red-legged frog (*Rana aurora draytonii*). A federally listed Threatened species and California Special Concern species, and a Fully Protected Species under Fish and Game Code 5050. It breeds primarily in ponds, but will also breed in slow moving streams, or deep pools in intermittent streams. Inhabited ponds are typically permanent, at least 2 feet (0.6 meters) in depth, and contain emergent and shoreline vegetation. Sufficient pond depth and shoreline cover are both critical, because they provide frogs with a means of escape from predators (Stebbins 1985, CDFG 1988, Tatarian, in preparation). Additionally, emergent vegetation is necessary for the deposition of eggs. The breeding period for California red-legged frogs (CRF) begins during heavy rains, from early to late winter, usually November through early May. Larvae mature in 11 to 20 weeks. Non-breeding CRF have been found in both aquatic and upland habitats.

This species is known to occur in the Carmel River (CDFG 2003E). Based on the development between the Carmel River and the September Ranch Subdivision project site, no suitable movement corridors occur between the river and the project site. No suitable breeding habitat occurs onsite. As noted above, during average water years the Carmel River has greater than or equal to 10,000 AF of water surplus, and during dry years the river has a surplus of approximately 1,000 AF or less. The project will result in reducing flows to the river by 57 AF in average and above average water years, which can be accommodated under the surplus scenarios. No impacts, direct or indirect, to this species are expected from the September Ranch Subdivision project based on the lack of water drawdown of the Carmel River.

Other Special Status Animal Species

California spotted owl (*Strix occidentalis occidentalis*). A federal and State species of concern, occurs in conifer forests and oak woodlands, is confined to California, primarily in the Sierra Nevada, and the south Coast, Transverse and Peninsular ranges (Verner et al. 1992; Tietje 1993). This species may also occur in the denser riparian/hardwood forests, especially in the foothills bordering the eastern portion of the Central Valley (Verner et al. 1992). Nesting sites occur in pre-existing cavities or on natural platforms, such as mistletoe, and are predominantly found in oak woodlands that are in or near riparian areas within steep sided canyons, at elevations from 800 to 6,000 feet. Nest trees typically have a diameter at breast height (dbh) of 45 inches in Sierra conifer forests (Verner et al. 1992). Foraging habitat seems to be in areas of 50 percent canopy and nesting areas occur in canopies of 70 percent. Dominant nesting tree species are blue oak, interior live oak, California bay, California buckeye, grey pine and California sycamores that often exceed 20 inches in diameter. Only two or three species make up the diet, including northern flying squirrels, dusky-footed woodrats, bushy-tail woodrats, and rabbits (Verner et al. 1992).

The closest reported nesting area is Los Padres National Forest, located approximately 11 miles southwest of the study area. No sightings have been reported in Jacks Peak County Park. The potential for occurrence is low, based on the elevation of the site.

Long-eared owl (*Asio otus*). A California species of concern, nests in coniferous and mixed coniferous-deciduous forests, near water. Nests are usually abandoned nests of other species, such as crows, and are placed in the tree between 30-40 feet in height. This species feeds primarily on rodents, although small birds will be taken opportunistically.

No reported sightings occur within or adjacent to the study area. There is a moderate potential for this species to nest onsite.

Golden eagle (*Aquila chrysaetos*). The golden eagle is a Species of Special Concern as designated and the focus is on protecting the species' nesting habitat. Golden eagles require expansive areas of open space, such as grasslands and open wooded habitats for foraging, and nest in nearby woodlands or cliffs. Nests are commonly built at sites with a good view of the surrounding landscape, such as on cliffs, in secluded trees, and other high vantage points. Golden eagles are very sensitive to disturbance at nesting sites. The golden eagle is regularly sighted along the foothills of the eastern Salinas Valley, Elkhorn Slough, around Lake San Antonio, and in the Ventana Wilderness of the Los Padres National Forest (Mori 1995). A golden eagle nest was recorded approximately 0.5 miles north of the Canada Woods parcel located east of the project site (BioSystems 1991).

No golden eagles were observed on the project site by Mori during the November 1994 surveys; however, the Monterey pine/coast live oak forest on the project site may provide suitable nesting habitat for this species.

Sharp-shinned hawk (*Accipiter striatus*). The sharp-shinned hawk is also a Species of Special Concern whose nesting habitat is of primary concern. This species typically nests in coniferous forests of mountainous regions and usually builds its nest in dense pole-sized stands that are cool, moist and near open foraging areas. Sharp-shinned hawks commonly prey on small perching birds but are also known to eat small mammals and reptiles (CDFG 1990). Sharp-shinned hawks are locally distributed and are rare breeders in the forested mountainous regions of Monterey County (Roberson 1985).

Mori observed one sharp-shinned hawk foraging on the project site during the November 1994 surveys. Although likely an uncommon visitor during migration and in winter, there is the possibility the species may nest on the site in the more secluded, moist stands of Monterey pine/coast live oak forest.

Cooper's hawk (*Accipiter cooperi*). Protection of nesting habitat for the Cooper's hawk, a Species of Special Concern, is also of primary concern to CDFG. Cooper's hawks are typically found in oak woodlands and coniferous forests located near water. They prey primarily on small birds but will also consume small mammals, reptiles, and amphibians. According to Roberson (1985), many more Cooper's hawks migrate through Monterey County than breed. The highest occurrence of nesting sites in the County occurs in the Carmel Valley watershed where heavily wooded canyons provide secure nesting habitat.

No Cooper's hawks were observed on the project site during the surveys conducted in November 1994 and January 1995 by Mori. However, the Monterey pine/coast live oak forest on the project site provides suitable nesting habitat for this species.

Purple martin (*Progne subis*). The purple martin is a Species of Special Concern (nesting habitat protected). Purple martins are swallows that were once widespread in Monterey County but have declined due to the introduction of the European starling (Roberson 1985). The species generally nests in large trees, usually dead, with holes dug by woodpeckers. Migrating purple martins are found in a variety of habitats, including grasslands and marshes. In Monterey County, this species is a locally uncommon resident however it is known to regularly breed in the Big Sur region of the Los Padres National Forest. The purple martin has also been observed nesting under the Highway 1 Bridge at Tone Canyon.

No purple martins were observed on the project site by Mori during the November 1994 and January 1995 surveys. However, there is a potential the species could nest in dead pines or oaks located on the site that contain woodpecker holes.

White-tailed kite (*Elanus leucurus*). The white-tailed kite is considered a "fully protected species" by CDFG meaning that it cannot be taken or possessed at any time. White-tailed kites are typically found in oak savanna and agricultural habitats with occasional trees. The species feeds primarily on voles and nests in trees near foraging habitat. White-tailed kites are fairly common in open country along the coast and inland in the Salinas and Carmel valleys. The nesting season runs from January through July.

No white-tailed kites have been observed on the project site but there is potential nesting habitat for the species in the Monterey pine/coast live oak woodland forest stands adjacent to open grasslands.

Passerines Several species of passerines (perching birds) may occur onsite in the Monterey pine/oak woodland forest, including hairy woodpecker, Stellar's jay, brown creeper, and pygmy nuthatch. Other species, such as the blue-gray gnatcatcher, wrentit, Bewick's wren, may potentially use the coastal sage scrub for nesting. The breeding season typically occurs between March 1 and July 31.

Pallid bat (*Antrozous pallidus*). The pallid bat, a Species of Special Concern, is commonly found in a variety of habitats in lowland areas. The pallid bat is not considered a migratory species although it will move locally on a seasonal basis. Pallid bats use buildings, rock crevices, caves, mines, and hollow trees for day and night roosts (CDFG 1986). Feeding bats and males roost singly. Maternity roosts are colonial and are maintained from spring through summer. Once the young bats have fledged, the adults leave the maternity roosts. Pallid bats commonly glean moths from leaves and forage on the ground for insects, most notably Jerusalem crickets. Pallid bats are known to occur on Rancho San Carlos, which is within the vicinity of the project site.

No specific surveys for bats have been conducted on the project site. Potential roost sites for the pallid bat may occur in the lower forest stand where large cavity-bearing oaks and snags exist.

Myotis bats. Several bat species of the genus Myotis that could occur on the project site are federal Species of Concern. The small-footed myotis (*Myotis ciliolabrum*) occur in a variety of habitats in relatively arid uplands and forages in open forests and brushy areas. The fringed myotis (*Myotis thysanodes*), are commonly found in valley foothill hardwood forests and forages primarily in open areas. The long-legged myotis (*Myotis volans*) are found in woodlands and forests and typically forages over chaparral and coastal scrub. The Yuma myotis (*Myotis yumanensis*) prefers open woodlands and grasslands near water. These four species of myotis bats are known to occur on Rancho San Carlos (Habitat Restoration Group et al. 1991).

Other tree roosting bat species that are federal Species of Concern include long-eared bat (*Myotis evotis*) and Yuma myotis *(Myotis yumanensis*) which may roost in the large trees present within the Monterey pine/coast live oak forest, with some species, such as the fringed myotis, being heavily dependent on tall conifer snags in early decay stages for day roosts (Weller and Zabel 2002). For this analysis, red bat (*Lasiurus blossevillii*), another tree roosting species, is also considered in this analysis, as it is currently under evaluation by the CDFG.

No site specific surveys for myotis bats were conducted. However, Mori concluded that suitable roosting habitat for the different Myotis species is present on the site.

Monterey dusky-footed woodrat (*Neotoma fuscipes luciana*). A California Special Concern species, the Monterey dusky footed woodrat is restricted to Monterey County and northern San Luis Obispo County. The Monterey dusky-footed woodrat uses habitats with moderate to dense cover and abundant dead wood for nest construction. This nocturnal species is active year round, and forages on fungi, flowers, grasses, and acorns supplementing their diet. Breeding occurs from December to September with a peak in mid-spring (Zeiner et al. 1990).

Although no signs of dusky-footed woodrats have been reported for the project site, the species could use the Monterey pine/coast live oak woodland forest located within the site.

4.9.2 Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The September Ranch Subdivision project is considered to have a significant impact upon biological resources if it will:

- Substantially adversely affect any special status, rare, threatened or endangered species of animal or plant or the habitats of the species;
- Substantially adversely affect high quality or undisturbed biological communities, vegetation associations, and habitats that are restricted on a regional basis or serve as a wildlife corridor or buffer;
- Interfere substantially with the movement of any resident or migratory fish or wildlife species;
- Substantially adversely affect biological resources of scientific interest because they are at their physical or geographical limits or represent an unusual variation in a population or community; or
- Substantially adversely affect habitats that are key to maintenance of localized plant and animal populations, even if these habitats are not biologically significant on a regional scale.

Potentially Significant (Biological Resources Impact 1) – Habitat Disturbance during Site Improvements, Clearing, and Grading: Initial site improvements will be limited to clearing and grading. However, because of the placement of lots, limitations on building envelopes, and use of existing road alignments, less than 80 acres (approximately 9 percent) of the vegetation and wildlife habitat on the project site (exclusive of existing disturbed or developed areas) will be directly lost or disturbed as a result of the project. Approximately 795 acres out of 891 acres of the site will remain relatively undisturbed as either common or private open space. An additional 24.2 acres that comprise the equestrian center will be retained as is under existing conditions. Furthermore, removal of trees and other native vegetation within the building envelopes themselves will be limited to comply with Monterey County regulations and will require County approval prior to issuance of individual building permits or roads and other infrastructure while subsequent residential development of the site will affect lands within the designated building envelopes. For purposes of assessment it was assumed that habitat values within the building envelope of each lot will be lost as a result of project buildout. In all, a total of 71.37 acres of native vegetation communities, including Monterey pine forest, coastal scrub, and grasslands, will be impacted from development within the September Ranch Subdivision project area.

Table 4.9-2: Impacted Vegetation Communities

Vegetation Community	Total Acreage	Impacted Acreage
Monterey Pine/Coast Live Oak Forest	426.00	34.90
Coastal scrub	378.00	18.55
Grassland	62.00	17.92
Willow Riparian Scrub	0.77	NA
Total	**866.77[1]**	**71.37**

[1] This acreage total does not include the 24.2 acre equestrian center, which is to be retained onsite.
Source: MBA, January 2004.

Mitigation Measure

4.9-1: The project applicant shall submit a Tentative Map that is consistent with the recommendations outlined in the Forest Management Plan, the Open Space Management Plan, and the Grassland Habitat Management Plan and will include the following:

- Defines development envelopes for each residential lot to minimize vegetation removal;
- The identification of potential areas for building envelopes prior to the tentative map. The tentative map shall show the appropriate placement of the buildings with respect to the current conditions (i.e., slope, vegetation areas). All building envelopes shall require plant surveys that shall be conducted at the appropriate time (individual blooming periods are shown in the biological report in Appendix H of this REIR);
- Prohibits planting/introduction of nonnative invasive plant species (such as acacia, French or Scotch broom, and pampas grass) within any portion of proposed lots, and prohibit planting/introduction of any nonnative species outside the development envelope;
- Development of landscape guidelines that encourage the use of native species indigenous to the area as ornamentals and prevent the use of invasive exotics;
- Limits the use of fencing to designated development envelopes, and prohibit fencing of parcel boundaries in order to maintain areas for wildlife movement;
- Restricts direct disturbance or removal of native vegetation to designated development envelopes, as planned, through project covenants, codes and restrictions (CC&Rs), through dedication of a conservation or open space easement, or other similar method (The project applicant currently proposes dedication of scenic easements over all portions of the site outside designated development envelopes).
- Establishes lot restrictions and common open space regulations that limit uses and prescribe management responsibilities in private and common open space areas beyond the building and development envelopes identified in the final map.
- Defines the conservation (scenic) easements dedicated to an entity acceptable to the County of Monterey. These conservation easements are legally binding use restrictions recorded on privately owned land that can provide a high degree of protection to certain areas on the property while allowing the rest of the land to be developed and used at the owner's discretion. Conservation easements to the benefit of the County of Monterey should be recorded with the sale of the lot and should run with

the land regardless of the number of times the land is sold. Such easements should be set aside for as much of the private open space on the property as is feasible to guarantee the long-term preservation of the site's overall biological resource values. Examples of the types of restrictions that should be considered in these conservation easements include the following:

- Relinquishment of all development rights within the easement area;
- Maintenance of natural habitat;
- Pesticide use restrictions;
- Only compatible public recreation uses allowed within easement lands, not uses that cause disturbance to native vegetation and wildlife;
- Restricted trails for pedestrians, hikers and cyclists within easement lands;
- No vehicles of any kind allowed in easement lands except for those required by the habitat/open space manager in performance of habitat monitoring or maintenance activities;
- No alteration of land including grading, disking, compacting, soil removal or dumping shall be allowed unless the work is for the purpose of habitat management/restoration and authorized by the habitat/open space manager;
- No removal of flora or fauna from the easement area including mowing or weed whacking unless authorized by the habitat/open space manager;
- Limitations/restrictions will be placed on construction of permanent or temporary facilities (e.g., picnic tables or portable toilets) within the easement areas in accordance with the goals of the open space management program;
- Leash laws within the easement areas must be enforced; and
- Right of inspection of the easement area by the easement holder and habitat/open space manager.

Implementation of the mitigation measure will reduce site improvements, clearing, and grading impacts to less than significant.

Monitoring Action

Prior to the issuance of building permits, the project applicant shall submit the Tentative Map that is consistent with the Forest Management Plan, the Open Space Management Plan, and the Grassland Habitat Management Plan, CCRs, and above easements to the Monterey County Planning and Building Inspection Department for review and approval.

Potentially Significant (Biological Resources Impact 2) - Impacts to Monterey pine/coast live oak forest: Approximately 34.90 acres of Monterey pine/coast live oak forest habitat will be directly impacted from construction, roads, utilities, and building pads. Approximately six percent of the coast live oak trees (890 out of a conservatively estimated 15,200 trees) and approximately four percent of the Monterey pines (2,692 out of a conservative estimate of 66,540 trees) that occur onsite will be removed as a result of roadway development. In addition, pine trees not slated for removal may suffer mechanical damage during site

preparation and future home construction from tree removal, soil disturbance, and compaction. If branches or trunks are damaged during removal of other pines, pine pitch canker may enter the tree through a wound.

Mitigation Measures

4.9-2: The project applicant shall submit a Forest Mitigation and Monitoring Plan, which will include the following:

- Replacement of lost Monterey-pine coast live oak forest acreage at on a 3-to-1 ratio (3 acres for every 1 acre lost to project development), based on the sizes of the trees removed, appropriate sized plantings will be required as replacement specimens for those specimens lost due to development.
- Use of Monterey pines grown from seed collected in locations bordering the tree clusters from which the trees were removed. Replanting should avoid open spaces where currently there are no trees unless there is evidence of soil deep enough and of good enough quality to support the plantings.
- Monitoring of the tree plantings for five years or until 70 percent are successful.
- Provide an adaptive management scenario if the success criteria are not being met.
- Require protection of oak and Monterey pine trees located outside designated development envelopes unless proven to be diseased or unhealthy as determined by a qualified arborist.
- Require tree removal permits and tree replacement for removal of any oaks that may occur as part of future lot construction, pursuant to County regulations, and require replacement of removed Monterey pine trees from onsite genetic stock.

4.9-3: To reduce the loss of individual trees, replacement planting of 1:1 shall be conducted by planting seedlings in areas determined appropriate by a professional forester. The following is recommended:

- A tree replacement plan shall be prepared by a qualified professional forester, arborist, or horticulturist, and will be subject to review and approval by the County Planning & Building Inspection Department, that includes the following:
  - Identify tree planting areas with suitable soils that will also fulfill project landscape plans and visual screening objectives, as feasible.
  - Identify monitoring requirements, such as a site inspection at the end of the first winter after planting to confirm numbers, species of replacement, and locations of plantings. Annual inspections over five years shall confirm the objective of the plan, such as the survivability of the plantings, and the percentage of healthy trees.

- Transplanting of onsite native seedlings within construction areas and protection of those occurring near construction areas to maintain natural diversity and adaptation.
- Replacement oaks shall be of local genetic stock.
- All replacement pines shall be transplanted or grown from seeds collected from asymptomatic trees, found within 500 feet in elevation of the planting site. Overabundant direct seeding of open pollinated pine seed or 4:1 planting of open pollinated seedlings is recommended for a portion of the pine replacement trees with thinning to appropriate spacing after 3 years under the direction of a professional arborist.
- Most replacement shall be of a small size (cell or one gallon) as studies have shown that small trees more readily adapt to a site and grow larger over the mid-to long-term.

4.9-4: To avoid mechanical damage to pines not slated for removal, the following measures are recommended:

- Pines adjacent to ones slated for removal will be removed individually;
- Minimize mechanical tree damage such as skinning of the trunks, partial pushovers, etc. during construction or harvesting operations. Tree damage from recent logging activities favors all kinds of bark beetles;
- Build barricades around trees to prevent mechanical damage by equipment in yard and landscape environments. Try to minimize root damage by keeping trenching and digging to a minimum;
- During landscaping operations, maintain final soil level around tree trunks and roots at the same height as it was before construction; and
- Direct all drainage from developed areas away from low or flat areas near trees to prevent saturation of soils at the base of trees.

Implementation of the mitigation measures will reduce Monterey pine/coast live oak forest impacts to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the project applicant shall submit a Forest Mitigation and Monitoring Plan prepared by a qualified professional, and subject to review and approval by the Monterey County Planning and Building Inspection Department. In addition, the applicant shall submit periodic reports (dates to be negotiated by the Monterey County Planning and Building Inspection Department and the applicant) prepared by a qualified professional to the Monterey County Planning and Building Inspection Department outlining implementation and success of the Forest Management Plan.

Potentially Significant (Biological Resources Impact 3) - Fragmentation of the Monterey pine forest will increase the potential for pitch canker and other diseases: Research indicates that

pitch canker symptoms decrease in frequency and severity at lower elevations and as the distance from the coast increases (Staub 2002). September Ranch, located 3 miles inland, supports pines that are growing at and above 30 feet above mean sea level in elevation. Thus, due to the geographic location of the native stands of Monterey pines, the threat of pitch canker is lessened (Staub 2002). Nevertheless, there is the potential that placing development (roads, utilities, fences, and clearings around homes) throughout the Monterey pine forest may fragment the forest and increase the vulnerability of the forest to pitch canker and other diseases. Mortality from pitch canker is highest in areas that have been penetrated by roads and where trees have been removed. The susceptible nature of Monterey pines to pitch canker fungus makes the pines within the project area at risk for the disease. Native insects, such as bark beetles and twig beetles can also spread airborne spores of the fungus. Long-distance spread of the virus can occur from transportation of infected logs, nursery stock, seeds, or soil.

Mitigation Measure

4.9-5: There is no proven method available that will prevent pitch canker from infecting susceptible trees. To prevent the spread of the fungus into the pines within the project site, some actions can be taken to slow down the spread of the fungus, including the following:

- Delay removal, thinning operations or severe pruning until winter when beetle activity has declined if bark beetles are active in the area;
- Remove storm- or lightning-damaged pine trees as quickly as possible. Damaged pines are ideal sites for the start of bark beetle infestations;
- Debark recently killed trees and branches with timely chipping and removal of diseased or insect infested tree material from nearby susceptible trees. In addition, all trees proposed for removal shall be removed carefully so as not to injure (including breaking nearby branches, cutting trunks, etc.) adjacent trees not slated for removal. There are some Monterey pines that are resistant to the pathogen and these trees should be used as a seed-base for replanting.
- Encourage vigorous tree growth. Susceptibility to beetle attack increases with stand age and slow diameter growth.

Implementation of the mitigation measure will reduce impacts on Monterey pine forest fragmentation to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the project applicant shall submit a Forest Mitigation and Monitoring Plan prepared by a qualified professional, subject to review and approval by the Monterey County Planning and Building Inspection Department. In addition, the applicant shall submit periodic reports (dates to be negotiated by the Monterey

County Planning and Building Inspection Department and the applicant) prepared by a qualified professional to the Monterey County Planning and Building Inspection Department outlining implementation and success of the Forest Management Plan

Potentially Significant (Biological Resources Impact 4) - Disturbance of Oak Trees: Oak trees not slated for removal may suffer mechanical damage during site preparation and future home construction from soil disturbance and compaction, including grading and filling, as well as introduction of landscaping and irrigation. If excavation occurs within the dripline or if soil underneath the oak is compacted due to grading and/or use of heavy equipment, death may occur through damage of very fine roots near the surface.

Mitigation Measure

4.9-6: Submit final Forest Management Plan subject to review and approval by the County Planning & Building Inspection Department that includes the following:

- Prohibit grading, filling, and all subdivision construction activity within the dripline of oak trees, where possible. Each tree or group of trees in the construction area designated to remain shall be protected by an enclosure (5-foot temporary fence), prior to the beginning of construction. The location of the fence is normally at the dripline of the tree;
- Develop CC&Rs that shall include measures for protection of oak trees on individual lots as part of future home construction, as well as guidelines for appropriate landscaping management to protect remaining oaks. Wherever possible, future homes should be sited outside of the dripline of any oak. Generally, irrigation should be prohibited within an area 1/3 larger than the dripline of oak trees; and
- Direct all drainage from developed areas away from low or flat areas near trees to prevent saturation of soils at the base of trees.

Implementation of the mitigation measure will reduce oak tree disturbance impacts to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the project applicant shall submit a Forest Mitigation and Monitoring Plan prepared by a qualified professional, subject to review and approval by the Monterey County Planning and Building Inspection Department. In addition, the applicant shall submit periodic reports (dates to be negotiated by the Monterey County Planning and Building Inspection Department and the applicant) prepared by a qualified professional to the Monterey County Planning and Building Inspection Department outlining implementation and success of the Forest Management Plan

Potentially Significant (Biological Resources Impact 5) - Removal of Coastal Sage Scrub: Approximately 18.55 acres of coastal sage scrub will be removed during construction of

infrastructure improvements and construction of houses. In the context of the overall acreage of this habitat type retained on the property (approximately 359.45 acres out of a total of 378 acres) and its relative sensitivity, this acreage reduction is a low impact.

Mitigation Measure

4.9-7: Clear definition of the development envelope for each lot in the grassland areas, restrictions of the remainder of the lots, and implementation of the Tentative Map (Mitigation Measure 4.9-1) that details the general open space management measures and conservation easement designations on lots should reduce some of the impacts to coastal sage scrub. In addition, to reduce the impacts to coastal sage scrub, the following mitigation measures are recommended:

Submit final Open Space Management Plan subject that includes the following:

- Protection and enhancement for the long-term viability of the habitat types onsite and the plant and animal species they support;
- Incorporation into project documents that are passed on to homeowners. The plan should include, but not be limited to, the following:
  - Limiting native vegetation removal and other disturbances in areas not specifically designated for buildings and other facilities to minimize losses to coastal sage scrub and grassland areas with high concentrations of native species as well as Monterey pine, coast live oak forest;
  - Protection of sensitive plant species identified herein (and in subsequent studies) through design, setbacks, salvage and relocation, and other means wherever feasible; and
  - Designation of trails and other directed access to/through common open space areas to reduce inadvertent habitat degradation.

Implementation of the mitigation measure will reduce coastal sage scrub impacts to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the project applicant shall submit an Open Space Management Plan, subject to review and approval by the Monterey County Planning and Building Inspection Department.

Potentially Significant (Biological Resources Impact 6) - Removal of Grasslands: Approximately 18 acres of the grasslands on the site lie within the project's building envelopes or roads and approximately 44 acres of this habitat type will remain as managed open space. Two large grassland areas near the project entrance were identified as areas supporting a high diversity and abundance of native wildflowers and grasses will be preserved as open space and should be actively managed to maintain existing values and enhance dominance by native plant species. Other grassland areas with a good representation of native species and high native plant diversity occur where lots and access roads are

proposed. Native grasslands, in particular, coastal terrace prairie occur on the lower slopes of the study area.

Mitigation Measures

4.9-8: Submit a final Grassland Management Program that addresses the following:

- Preservation, enhancement, and restoration of native grasslands on the site. The Grassland Management Program shall include:
  - Clear definition of the building footprint for each lot in the grasslands areas, restrictions on the remainder of the lot; and
  - Description of the implementation of an active grassland management program for both the lots and the common open space areas.
- The Grassland Management Program shall include the following requirements:
  - Light rotational, seasonally-timed grazing and/or appropriately timed mowing to reduce the cover of non-native annual grasses;
  - Preclude soil disturbance through cultivation;
  - Preclude the use of herbicides unless applied directly to invasive, non-native species;
  - Address the removal of Monterey pine seedlings in the native grasslands (either through mowing or chipping);
  - Address restoration in areas dominated by invasive species like French broom; and
  - Consider the possible use of fire management on both the common open space and private open space grassland areas.

4.9-9: To reduce the acreage impacts to coastal terrace prairie, houses on each lot shall be placed outside the natural community and conservation easements shall be placed over the vegetation community. Landscape plantings shall be restricted to native plant species adapted to summer fog incursion zone to prevent the further spread of non-native species into the native grasslands.

Implementation of the mitigation measure will reduce grassland removal impacts to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the project applicant shall submit a Grassland Management Program, subject to review and approval by the County Planning and Building Inspection Department.

Potentially Significant (Biological Resources Impact 7) - Removal of Special Status Plant Species: Special status plant species may be impacted from the development of roadways and buildings. In all, three species have been observed onsite and an additional thirteen have the potential to occur onsite: Small-leaved lomatium; Congdon's tarplant; Eastwoods's

goldenbrush; Santa Cruz tarplant; Carmel Valley malacothrix; Fransiscan manzanita; Contra Costa manzanita; Monterey manzanita; Hickman's onion; Fragrant fritillary; Carmel Valley beach mallow; California adder's-tongue; Michale'spiperia; Monterey pine; Monterey spineflower; and Hutchinson's larkspur (see Appendix A of Appendix H of this Draft REIR).

Mitigation Measure

4.9-10: To reduce the potential "take" of individuals the following are recommended:

- Prior to construction of roadways or individual houses, a botanical survey shall be conducted during the appropriate blooming period for each species. If no individuals are observed no further action is required.

  If individuals are found a report shall be prepared, as explained in the Monterey County General Plan Policy 3.3, detailing the habitats affected by the project, the species potentially affected by the project, and the appropriate mitigation measures to reduce the "take" of individuals. Informal consultation with CDGF/USFWS may be required. CDFG/USFWS may require further actions.

- If individuals are found a report shall be prepared, as explained in the Monterey County G.P. Policy ER 3.3, detailing the habitats affected by the project, the species potentially affected and appropriate mitigation measures to reduce "take" of individuals. Informal consultation with the USFWS will be required if Monterey spineflower are found. Mitigation may include but not be limited to avoidance of populations, restoration, maintenance, and enhancement and obtaining an Incidental Take Permit from the USFWS and notification with the CDFG.

Implementation of the mitigation measure would reduce removal of special status species plants impacts to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the project applicant shall prepare and submit a botanical survey, subject to review and approval by the Monterey County Planning and Building Inspection Department.

Potentially Significant (Biological Resources Impact 8) - Removal of Nesting Habitat: The September Ranch Subdivision project would result in the removal of nesting habitat for raptors, such as the California spotted-owl and Cooper's hawk, especially in the Monterey pine/coast live oak forest. The project could result in the removal of potential passerine nesting habitat in the non-native grasslands. Specifically, the rate of erosion on the hillside could be increased and the nesting availability for passerines and raptors could be reduced as a result of the removal of coast live oak trees and Monterey pines (with a dbh greater than 6 inches) for roadwork and residential lots, inclusionary housing, and detention ponds.

Disturbance during the nesting season may result in the potential nest abandonment and mortality of the young.

Mitigation Measures

In addition to Mitigation Measure 4.9-3, which addresses the loss of the individual trees, and thus the loss of nesting habitat, the following mitigation measures are recommended:

4.9-11: To avoid a take and/or further evaluate the presence or absence of raptors, the following is recommended:

- Removal should be conducted outside the nesting season, which occurs between approximately March 1 and August 15. If grading before March 1 is infeasible and groundbreaking must occur within the breeding season, a pre-construction nesting raptor survey should be performed by a qualified biologist. If no nesting birds are observed, no further action is required and grading may occur within one week of the survey to prevent "take" of individual birds that may have begun nesting after the survey. If birds are observed onsite after February 1 it will be assumed that they are nesting onsite or adjacent to the site. If nesting birds are observed, ground breaking will have to be delayed until after the young have fledged, as determined by bird surveys conducted by a qualified biologist, or after the nesting season.
- The CDFG Central Coast Regional office does allow grading/or tree removal to occur if nesting birds are observed onsite, providing that a 100- to 500-foot buffer zone is created around the observed nest. Because nests may occur in the middle of the grading area, this method is not advised.

4.9-12: To avoid a take and/or further evaluate the presence or absence of passerines, the following is recommended:

- Grading within the grasslands shall be conducted outside the nesting season, which occurs between approximately March 1 and July 31. If grading before February 1 is infeasible and groundbreaking must occur within the breeding season, a qualified biologist should perform a pre-construction nesting bird survey of the grasslands. If no nesting birds are observed, no further action is required and grading may occur within one week of the survey to prevent "take" of individual birds that may have begun nesting after the survey. If birds are observed onsite after February 1 it will be assumed that they are nesting onsite or adjacent to the site. If nesting birds are observed, ground breaking will have to be delayed until after the young have fledged, as determined by bird surveys conducted by a qualified biologist, or after the nesting season.
- The CDFG Central Coast Regional office does allow grading to occur if nesting birds are observed onsite, providing that a 75- 100-foot buffer zone

is created around the observed nest. Because nests may occur in the middle of the grading area, this method is not advised.

Implementation of the mitigation measure will reduce removal of nesting habitat impacts to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the applicant shall provide the Monterey County Planning and Building Inspection Department with written verification that nesting birds will not be disturbed and that a preconstruction survey has been performed and grading will occur in accordance with CDFG regulations.

Potentially Significant (Biological Resources Impact 9) - Removal of Bat Habitat: Several bat species have potential to occur onsite in the medium (12-19 inches in diameter) and large (>20 inches) diameter Monterey pine and coast live oak trees that are slated for removal.

Mitigation Measure

4.9-13: To avoid "take" and/or further evaluate presence or absence of roosting bats, the following measures are recommended:

- Snags shall not be removed without first being surveyed by a qualified bat biologist, 2-4 weeks prior to planned tree removal to determine whether bats are roosting inside the trees. If no roosting is observed, the snag shall be removed within 1 week following surveys. If bat roosting activity is observed, limbs not containing cavities, as identified by the bat biologist, shall be removed first, and the remainder of the tree removed the following day. The disturbance caused by limb removal, followed by a one night interval, will allow bats to abandon the roost.
- Remove large trees (<24" diameter at breast height [dbh]), or trees with cavities, between September 1 and October 30. This time period is after young are volant (flying), but before expected onset of torpor (winter inactivity). Smaller trees may be removed at any time.
- If trees larger than 24" dbh, or trees with cavities must be removed outside this time period, night emergence surveys should be conducted by a qualified bat biologist, 2-4 weeks prior to planned tree removal to determine whether bats are roosting inside the trees. If no roosting is observed, the tree should be removed within 1 week following surveys. If bat roosting activity is observed, limbs not containing cavities, as identified by the bat biologist, shall be removed first, and the remainder of the tree removed the following day. The disturbance caused by limb removal, followed by a one night interval, will allow bats to abandon the roost.

Implementation of these mitigation measures will reduce the project-related impacts to roosting bats to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the applicant shall submit a Forest Management Plan that outlines how construction activity will not disturb roosting/nesting bats and that will be subject to the review and approval by the Monterey County Planning and Building Inspection Department.

Consistency with Relevant Policies

The following Carmel Valley Master Plan (CVMP) policies apply to the proposed project:

CVMP Policy 7.1.1.1: Areas of biological significance shall be identified and preserved as open space. These include but are not limited to the redwood community of Robinson Canyon and the riparian community and redwood community of Garzas Creek. When a parcel cannot be developed because of this policy, a low density, clustered development may be approved. However, the development shall occupy those portions of the land not biologically significant or on portions of the land adjoining existing vertical forms, whether on-site or off-site and either natural or man-made, so that the development will not diminish the quality of such parcels or upset the natural functioning of the ecosystem in which the parcel is located. If this policy precludes development (but no subdivision) may be allowed provided impacts on the resource are minimized.

CVMP Policy 7.1.1.2: Areas of critical habitat for rare and endangered species as identified by either federal or state law and areas of biological significance should be identified and preserved as open space.

CVMP Policy 7.1.1.3: Development shall be sited to protect riparian vegetation, minimizing erosion, and preserve the visual aspects of the river. Therefore development shall not occur within a riparian corridor. In places where the riparian vegetation no longer exists, it should be planted to a width of 150 feet from the river bank or the face of the adjacent bluffs, whichever is less. Density may be transferred from this area to other areas of the parcel.

CVMP Policy 7.2.1.2: In new development, the potential for impact on rare and endangered species shall be assessed by County staff and appropriate mitigation of identified impacts shall be required in accord with policies 11.1.1.1 and 11.1.1.2. Existing vegetation shall be protected and only plants similar in habitat, form, and water requirements to native vegetation common to the Valley shall be used as the predominant additional or replacement landscaping material. The existing native vegetation should be maintained as much as possible throughout the Valley.

CVMP Policy 7.2.1.3: Plant materials shall be used to integrate the man-made and natural environments, to screen or soften the visual impact of new developments, and to provide diversity in developed areas.

CVMP Policy 7.2.2.1: Botanically appropriate species shall be used for required landscaping and erosion control.

CVMP Policy 7.2.2.2: The pamphlet entitled *The Look of the Monterey Peninsula Landscape* should be consulted for guidance in selection of plant species for landscaping of development projects. The publication is available at the Monterey County Planning Department and the Water Management District Office.

CVMP Policy 7.2.2.3: Weedy species such as pampas grass and genista shall not be planted in the Valley. Such species shall not be used in required landscaping and wherever they currently occur, they shall not be removed when the required landscaping is implemented.

CVMP Policy 7.2.2.5: The County shall discourage the removal of healthy, native oak, mandrone, and redwood trees in the Carmel Valley Master Plan Area. A permit shall be required for the removal of any of these trees with a trunk diameter in excess of six inches, measured two feet above ground level. Where feasible, trees removed will be replaced by nursery grown trees of the same species and not less than one gallon in size. A minimum fine, equivalent to the retail value of the wood removed shall be imposed for each violation.

CVMP Policy 7.2.2.6: Valley oaks should be used in landscaping planting plans on flood plain terraces.

CVMP Policy 9.1.2.2: Open space areas should include a diversity of habitats with special protection given areas where one habitat grades into another (these ecotones are ecologically important zones) and areas used by wildlife for access routes to water or feeding grounds.

CVMP Policy 111.1.1.1: Whenever a development proposal is received and is in or adjacent to a rare or endangered plant community as identified in 11.1.1.2, the County shall require the applicant to provide a botanical report prepared by a botanist from the County list of approved consultants. The report shall include a description of the habitat to be affected by the project, including area, species, rare or endangered status, if applicable, and suggestions for mitigation of project impacts. If any cases where rare or endangered species as defined by either State or Federal legislation is found on-site, no development shall proceed until an Incidental Taking Permit or exclusion is obtained in accordance with Federal Endangered Species Act and the State Department of Fish and Game is notified of the existence of the rare and endangered species (whether on federal list, State list, or both) pursuant to Fish and Game Code Chapter 10 Section 1913c.

CVMP Policy 11.1.1.2: The County Planning Department shall maintain records of the known locations of all rare or endangered plant species. Reports shall be on file and locations shall be noted on resources base maps. These maps shall be updated continuously as project applicant reports are received and from time to time as other agencies such as Fish and Game or the California Native Plant Society may make additional location reports available.

Consistency Analysis: A Biological Resources Assessment and a Forest Management Plan were prepared for the 1998 Final EIR for the September Ranch Subdivision. In addition, for the Draft REIR, field reconnaissance was conducted and a Biological Resources Assessment was prepared to document any changes in the biological environment since the previous project reports were prepared. The previous reports prepared for the 1998 Final EIR and the updated reports prepared for this Draft REIR identified areas with sensitive plant and/or animal species and habitats. Where feasible, mitigation has been recommended to reduce impacts to biological resources. Moreover, approximately 793 acres of the 891-acre project site are to remain as open space and no development is proposed within areas of known rare or endangered species.

The project applicant is required to prepare a Forest Management Plan, Open Space Management Plan, and a Grassland Habitat Management Plan, all of which are subject to review and approval by the Monterey County Planning and Building Inspection Department. The recommendations of these plans shall be incorporated into the Tentative Map (Mitigation Measure 4.9-1). Additionally, as outlined in Mitigation Measure 4.9-1, these plans would be designed to protect vegetation within each building envelope. Additionally, in accordance with the plans, potential areas or building envelopes where surveys shall be undertaken will be identified. Surveys and any associated mitigation will be conducted prior to building approval. Where tree removal would occur, replacement of lost acreage will be at a 3:1 ratio. Consistent with the CVMP, no development is proposed within riparian habitat. Houses on each lot shall be placed outside the natural community and conservation easements shall be placed over the vegetation community. To ensure further consistency, landscape plantings shall be restricted to native plant species adapted to summer fog incursion zone to prevent the further spread of non-native species into native grasslands.

4.10 Cultural Resources

Archeological Consulting and Research Associates conducted an archeological investigation in February 1981, for the September Ranch Subdivision project. The investigation included a site reconnaissance in preparation for the archeological assessment prepared for the project area. This assessment is summarized below and incorporated by reference into this Draft REIR.

4.10.1 Environmental Setting

Archeological Resources

Regionally, the Carmel area experienced intensive prehistoric use. The area was inhabited by Costanoans and evidence suggests that they established few permanent villages, although temporary, seasonal villages were utilized according to resource availability.

The project site itself lies within an area considered to have moderate to high cultural resources significance. The project site lies within the currently recognized ethnographic territory of the Salinan linguistic group, although it is also close to the Esselen and Costonoan groups. The Salinans followed a general hunter and gatherer subsistence pattern with partial dependence on local acorn crops.

Habitation is considered to have been semi-sedimentary and occupation sites can be expected most often at the confluence of streams, other areas of similar topography along streams, or in the vicinity of springs. These original sources of water may no longer be present. Resource gathering and processing areas and associated temporary campsites are frequently discovered on the coast.

Factors that influence the location of these sites include the presence of suitable exposures of rock for bedrock mortars or other milling activities, ecotones, the presence of specific resources (oak groves, marshes, game trails, trade routes, etc.), proximity to water, and the availability of shelter. Temporary camps or other activity areas may also be found along moderately sloping ridges or adjacent to animal trail corridors.

4.10.2 Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant impact upon cultural resources if it will:

- Cause a substantial adverse change of a historic resource defined in Section 15064.5 of the CEQA Guidelines;
- Cause damage to an important archaeological resources as defined in Section 15064.5 of the CEQA Guidelines; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Potentially Significant (Cultural Resources Impact 1) - Archaeological and Paleontological Resources: The project site does not support any structures that are eligible for listing on the

National Register of Historic Places, California Register of Historical Resources, the California Historical Landmarks (CHL), the California Points of Historical Interest (CPHI), or the California State Historic Resources Inventory (HRI) for Monterey County. An archaeological reconnaissance survey was conducted at the project site and the results presented in a report prepared by Archeological Consulting and Research Services. The purpose of the pedestrian reconnaissance was to identify visible surface evidence of cultural resources within the project site. In addition, archival research was conducted. The findings of the archival research and the pedestrian reconnaissance concluded that although the project area is located in an area considered to be moderate to high in archaeological sensitivity, the project site itself does not contain any previously unknown archaeological resources. There is however, the potential that earth-moving activities may uncover unknown, buried cultural resources.

Mitigation Measure

No surface evidence for previously unknown cultural resources was found within the project area by Archeological Consulting and Research Services. However, if earth moving and construction activities uncover unknown archaeological resources the following mitigation measure is recommended:

4.10-1: If during the course of construction, cultural, archeological, historical, or paleontological resources are uncovered at the site (surface or subsurface resources), work shall be halted immediately within 50 meters (165 feet) of the find until a qualified professional archaeologist or paleontologist can evaluate it. The County of Monterey Planning and Building Inspection Department and a qualified archeologist shall be immediately contacted by the responsible individual present onsite. When contacted, the project planner and the archaeologist shall immediately visit the site to determine the extent of the resources and to develop proper mitigation measures required for the discovery.

Implementation of the mitigation measure will reduce archaeological and paleontological impacts to less than significant.

Monitoring Action

Prior to the issuance of grading permits, the applicant shall submit the contracts with a Registered Professional Archeologist and a Registered Professional Paleontologist to the Director of Planning, Monterey County Planning and Building Inspection Department for approval.

Consistency with Relevant Plans and Policies

The following policies of the Carmel Valley Master Plan (CVMP) are applicable to the proposed project:

CVMP Policy 12.1.6.1: Archeological resources, historic resources, and ethnographic and ethnohistoric resources shall be identified, and if adverse impacts would result from a project their significance shall be evaluated prior to project approval. Based on the evaluation, important representative or unique resources shall be protected and preserved.

CVMP Policy 12.1.7.1: On discovery of archeological sites or historic sites or upon identification of ethnographic or ethnohistoric sites, procedures will be followed, which employ project modification, relocation or on-site mitigation measures appropriated to the location, significance of the find and potential impacts of development.

CVMP Policy 12.1.8.1: Archeological surveys are required within the three sensitivity zones as follows:

- ***High and Potentially High Sensitivity Zones:*** All permit applications, which include earth disturbing or earth altering activities (including but not limited to grading permits, utility and other excavations, foundation trenching and land leveling, etc.) shall be proceeded by a cultural resources reconnaissance.
- ***Low Sensitivity Zones:*** All major projects to projects otherwise requiring preparation of an EIR shall be preceded by a cultural resources reconnaissance. Construction of or addition to single-family dwellings and other major projects shall not be required to conduct cultural resources reconnaissance.

Consistency Analysis: The CVMP requires an archaeological survey for all permit applications for projects within a zone of high sensitivity to archaeological resources. In addition, the policies of the CVMP outline the procedures to be followed in the event that cultural resources are identified on a project site. In accordance with the CVMP, an archaeological reconnaissance was performed at the project site and the results were presented in a report prepared by Archeological Consulting and Research Services in February 1981, which concluded that although the project area is located in an area considered to be culturally sensitive, the site itself is not considered to contain known archaeological resources. Additionally, the record review did not identify any historic structures onsite.

- Freemont cottonwoods between Rancho Fiesta Road and Carmel Valley Road;
- Valley Oaks in Carmel Valley Village and in the Miramonte Road area;
- Old barns;
- Corrals, fences of rails, random length, vertical split redwood;
- The Farm Center;
- Old weathered wood ranch buildings on Berwick, Rancho Canada, and Carmel Valley Ranch properties;
- Vineyards, orchards, and gardens visible from Laureles Grade; and
- First views of Monterey pines westbound on Carmel Valley Road at Del Mesa Carmel on the north side of Carmel Valley Road.

Non-Critical Viewsheds. Non-Critical Viewsheds are places not visible from the public viewing area, screened, or very briefly visible to the public, so that non-existent or brief views do very little to alter the perception of the viewer regarding the rural character of Carmel Valley. Development in these places may affect nearby residents and therefore be construed as critical to them. However, these views are not deemed critical to maintaining the overall perception of Carmel Valley as a rural place.

Consistency Analysis: The project site possesses several key scenic features as defined by the CVMP's CVVS, including open fields and old barns, the Carmel Stone Quarry, and the frontal southwest facing slopes. The frontal slopes are vegetated, primarily with Monterey pines, coastal live oaks, and grasslands. The oak trees, old barns, and the stone quarry constitute "Significant but Non-Critical Viewsheds" under the guidelines established by the CVVS. To ensure consistency with the CVMP, the project has been designed so that the residential lots will minimize the effects to these "Significant but Non-Critical Viewsheds" or other sensitive public viewsheds. Moreover, the locations of these lots were selected to avoid creating a significant impact on common public viewing areas.

More specifically, the project's retention of nearly 783 acres of open space will result in maintaining the overall rural and visual character of the project area and the Valley. Retention of this open space will also provide visual buffers throughout the development itself and with the surrounding land uses (Exhibit 4.11-1 through 4.11-5). The existing onsite vegetation, dense brush and forested areas, will be retained within the common area open spaces to provide natural concealment of home sites from potential views. To further ensure consistency with the CVMP, a scenic easement will be dedicated over all portions of lots outside the designated building envelopes, including those areas in which development would occur on slopes greater than 30 percent. Consistent with the CVMP, the proposed project would minimize cut and fill slopes and scarring of hillsides through the careful selection of building sites. Any manufactured slopes would be revegetated with native vegetation as part of the proposed landscape plan.

The 1.9 acres of inclusionary housing will likely be the most visible feature of the proposed project; however, this component comprises only 0.6 percent of the total project site and, in accordance with the CVMP, is set back greater than 100 feet from Carmel Valley Road. In addition, the 15 units of inclusionary housing will be clustered and located near existing natural or manmade vertical features

4.11 Aesthetics

This section provides an assessment of the visual resources and characteristics within the project area in relation to potential changes that would result from the implementation of the proposed project. Visual impacts were evaluated using a combination of site reconnaissance, photo documentation, and a review of relevant Carmel Valley Master Plan (CVMP) policies.

4.11.1 Environmental Setting

Views from Surrounding Areas

The project site is located within the Carmel Valley. According to the CVMP, "The Carmel Valley is a scenic area. Major views are seen primarily from the Carmel Valley Road and Laureles Grade corridors. Many homes have views of one side of the Valley or the other, with the quality of the view being determined principally by the interrelationship between natural landforms and vegetative masses. While large areas of the Valley qualify as high-quality natural visual settings, many areas have been adversely affected by poorly sited or unscreened development."

The dominant viewshed features within the project area are the ridgelines of the Coastal Range that descend to the Valley floor. Vegetation cover along the ridgelines and slopes is variable. Development along the ridgelines and slopes is minimal; however, there are some isolated areas where development is highly concentrated.

In the vicinity of the proposed project, the frontal slopes of the surrounding coastal mountain range make up a majority of the foreground views with ridgelines in the background. Dense and evergreen vegetation along Carmel Valley Road primarily blocks views of development, which is generally located on the flatter alluvial lands south of Carmel Valley Road. The frontal slops and ridgelines located along the north side of Carmel Valley Road in the project area are predominantly open space, with intermittent limited views of development.

The portion of the project site along Carmel Valley Road is primarily flat and includes views of the existing equestrian center on the lower terrace in the foreground and views of the southwest frontal slopes dominate the middle and background. This area is highly visible from Carmel Valley Road in the immediate vicinity of the site and the existing agricultural uses establish the overall visual character of this portion of the site.

The portion of the project site proposed for residential development is generally screened from Carmel Valley Road due to the presence of existing vegetation and the sites steep topography. The upland portion of the site creates a distinctive landform, consisting of two prominent ridgelines with open, grassy slopes in the lower reaches. Significant stands of pine and oak trees are located throughout the upper ridges, and intermittently along drainages and near the base of slopes. The south-facing ridgelines and frontal slopes are not clearly visible from Carmel Valley Road because of the nature of the sites step-like topography.

Site Photographs

As shown in Exhibits 4.11-1 through 4.11-5, photographs were taken to document the existing physical characteristics and visual conditions within and around the project site. **Photograph 1:** This

photograph depicts the view looking northward from near the existing project site entrance toward the existing equestrian facilities.

Photograph 2: This photograph, taken from within the equestrian facilities depicts the view looking west across the south-central portion of the property.

Photograph 3: This photograph, taken from outside of but adjacent to the equestrian facilities depicts the view looking southeasterly across the property and across Carmel Valley Road and the surrounding properties.

Photograph 4: This photograph, taken near the base of a trail on the eastern portion of the property depicts the view west across the project site. Visible are the equestrian facility and the rolling hills within the western portion of the project site.

Photograph 5: This photograph taken on the eastern portion of the property depicts the view along one of the many trails that traverse the site. Visible is the dense brush that covers much of the property.

Photograph 6: This photograph taken in the lower to mid-central portion of the property depicts the view of the dense forested areas that typify this portion of the property.

Photograph 7: This photograph taken from the entrance to the equestrian center depicts the view looking westward along Carmel Valley Road.

Photograph 8: This photograph taken from the south side of Carmel Valley Road depicts the view looking eastward along the roadway alignment and the project site's southern perimeter.

4.11.2 Project Impacts

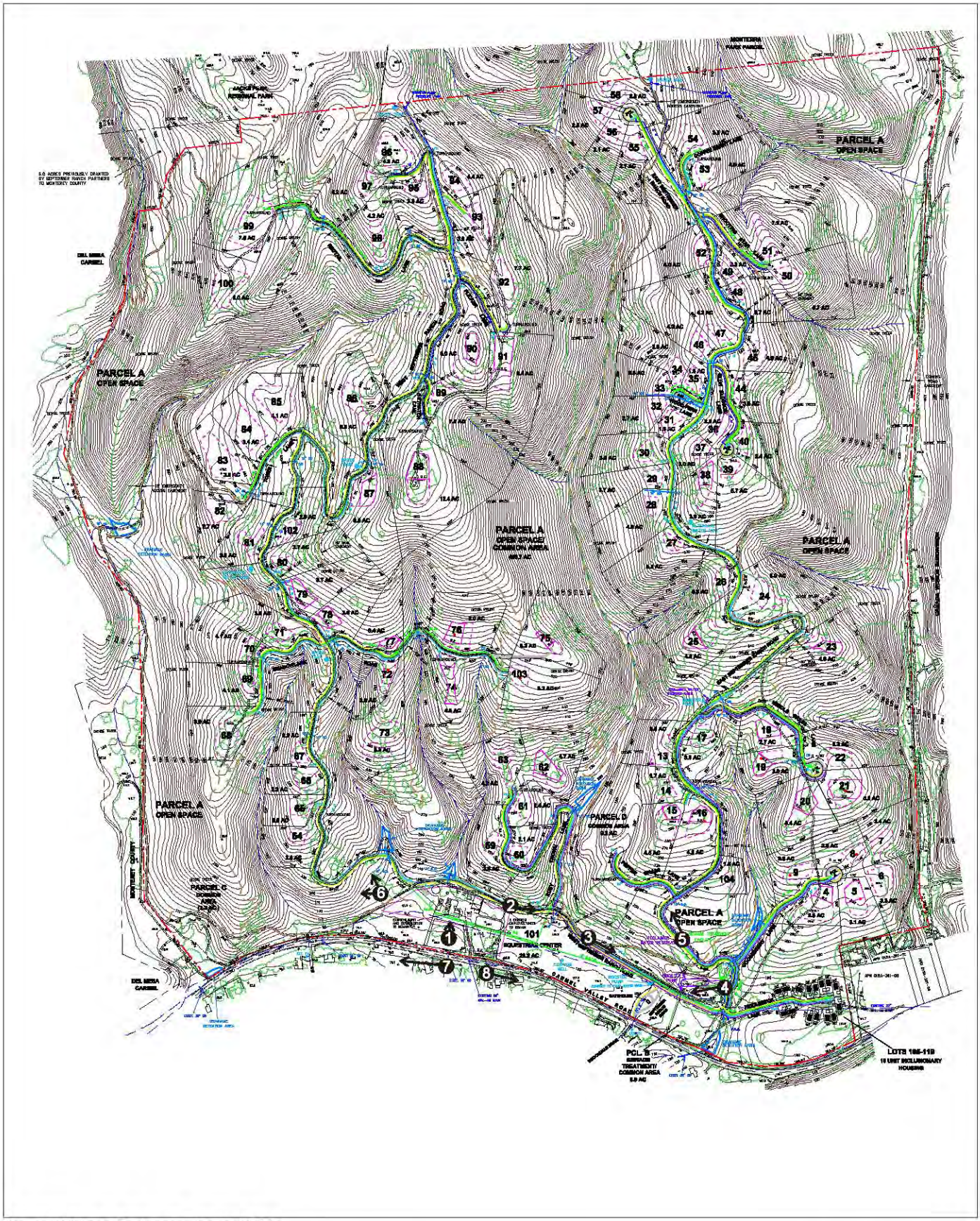
Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to result in a significant impact to aesthetics and visual resources if it will:

- Have a substantial affect of a scenic vista;
- Substantially damage a scenic resource, including but not limited to, trees, rock, outcroppings, and historic buildings within a scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light and glare, which would adversely affect day or nighttime views in the area.

Less than Significant Impact - Alteration of Existing Visual Character or Quality: The proposed project will result in altering the visual characteristics of the project site. Primarily the visibility of the 15 units of inclusionary housing will alter views into the project site from Carmel Valley Road; however, due to design features and existing topographical and physical site features, the views of



Source: Whitson Engineers, January 2003.

NORTH

390 195 0 390

SCALE IN FEET

Michael Brandman Associates

Exhibit 4.11-1
Photo Index Map

Photograph 1: Looking north at the equestrian facility.

Photograph 2: Looking west from the equestrian facility.

Source: Michael Brandman Associates, May 2003.

Michael Brandman Associates

Exhibit 4.11-2

Photographs 1 and 2

Photograph 3: Looking southeast across Carmel Valley Road at surrounding properties.

Photograph 4: Looking southwest at equestrian facility.

Source: Michael Brandman Associates, May 2003.

Michael Brandman Associates

Exhibit 4.11-3
Photographs 3 and 4

Photograph 5: Project site vegetation.

Photograph 6: Project site vegetation and forest.

Source: Michael Brandman Associates, May 2003.

Michael Brandman Associates

Exhibit 4.11-4
Photographs 5 and 6

Photograph 7: Looking east down Carmel Valley Road from existing access drive.

Photograph 8: Looking west down Carmel Valley Road from existing access drive.

Source: Michael Brandman Associates, May 2003.

Michael Brandman Associates

Exhibit 4.11-5
Photographs 7 and 8

these units from Carmel Valley Road will be limited. More specifically, in an effort to ensure the overall visually quality of the site is maintained, a visual field survey of the site and adjacent areas was conducted to assess the existing visual character of the property from key vantage points. This included the siting of lots through staking and flagging in an effort to identify the location of final building envelopes to minimize potential viewshed impacts. More specifically, siting of these lots were established by taking into consideration both topography and elevations in relation to public vantage points and transportation routes. Based on the current location of proposed lots and the clustering of the inclusionary housing, the project will not result in the development of home sites along the ridgelines, and will not obstruct views of the surrounding mountains, Carmel River, or other sensitive public viewsheds. Moreover, the project's internal circulation system has been designed to minimize the amount of cut and fill slopes that could be visible from areas within and viewpoints surrounding the project site. Therefore, implementation of the proposed project is not expected to significantly affect the scenic quality of the surrounding area or alter the visual character of the project site. The following measures are proposed to further reduce the project's effects on the visual character and scenic quality of the project area.

Potentially Significant (Aesthetics Impact 1) - New Sources of Light and Glare: The proposed project will introduce new sources of light and glare to the project area through the use of street and security lighting, outdoor residential lighting, and light generated from project-related traffic. Due to the proximity of the inclusionary housing to Carmel Valley Road, it is likely that this project component will be the most prominent source of light and glare that will affect existing viewhsheds. The introduction of new sources of light within the project area may potentially be significant and intrusive to surrounding residences since the site does not currently generate night lighting with the exception of the existing equestrian facilities, adjacent to Carmel Valley Road.

Mitigation Measures

4.11-1: Prior to the issuance of a grading permit, the applicant shall submit a Tentative Map, which will be subject to review and approval by the Monterey County Planning and Building Inspection Department (MCPBID). The MCBPID establishes envelopes on each proposed lot to define the building area that result in minimal grading and protect the public viewshed by avoiding ridgeline development and preserving existing screening vegetation. Home sites in building envelopes on the bluffs overlooking Carmel Valley Road should be limited in building height, as needed, to reduce visibility and screen buildings from Carmel Valley Road.

4.11-2: Prior to issuance of a grading permit, the applicant shall submit a design guidelines and landscaping plan subject to review and approval of the Monterey County Planning and Building Inspection Department. The plan shall utilize a rural-agricultural architectural theme for the proposed planned unit development, break up building mass of the units closest to Carmel Valley Road, and implement landscaping materials compatible with the surrounding area. This plan shall also address the sewage treatment facility. Landscaping shall incorporate mature trees in the area nearest to Carmel Valley Road.

4.11-3: Prior to issuance of a building permit, the project applicant shall dedicate open space easements as shown on the Preliminary Project Review Map through dedication of a scenic easement or other suitable method to insure its long-term protection.

4.11-4: The applicant shall submit a public space (including public roadways) lighting plan subject to review by the Monterey County Planning and Building Inspection Department. The plan shall identify the use of non-reflective materials, subdued colors, and lighting that does not create offsite glare.

4.11-5: The type, height, and spacing of security and parking lighting shall conform to the County standard, which requires that lighting be directed downward and be of a minimum intensity that will allow for proper safety.

Implementation of these mitigation measures will reduce the project's aesthetic impacts to levels considered less than significant.

Monitoring Action

Prior to issuance of building permits, the applicant shall submit a tentative map, design guidelines, dedicate an open space easement, and submit a landscape and lighting plan subject to review and approval by the Monterey County Planning and Building Inspection Department.

Consistency with Relevant Plans and Policies

The following policies of the CVMP are applicable to the proposed project:

CVMP Policy 26.1.9.1: In order to preserve the County's scenic and rural character, ridgeline development shall not be allowed unless a Use Permit is first obtained. Such development shall only be granted upon findings being made that the development as conditioned by permit will not create a substantially adverse visual impact when viewed from common public viewing areas. New subdivisions shall avoid lot configurations, which create building sites that will constitute ridgeline development. Siting of new development visible from private viewing areas may be taken into consideration during the subdivision process.

CVMP Policy 26.1.10.1: The County shall prohibit development on slopes greater than 30%. It is the general policy of the County to require dedication of scenic easement on slope greater than 30%. Exception may be made for development which can further the goals, and policies of this Plan.

CVMP Policy 26.1.26: Development either shall be visually compatible with the character of the Valley and the immediate surrounding areas or shall enhance the quality of areas that have been degraded by existing development.

CVMP Policy 26.1.28: Structures located in open grassland areas where they would be highly visible from Carmel Valley Road and Laureles Grade Road shall be minimized in number and clustered near existing natural or man-made vertical features.

CVMP Policy 40.2.1.1: An appropriate setback at a minimum of 100 feet shall be established along Carmel Valley Road without causing existing structures to become non-conforming and without rendering existing lots of record unbuildable.

CVMP Policy 40.2.1.3: Development (including buildings, fences, signs, and landscaping) shall not be allowed to significantly block views of the viewshed, the river, or the distant hills as seen from key public viewing areas such as Garland Ranch Regional Park, and such obstructions shall be

discouraged along both Carmel Valley Road and Laureles Grade Road. This applies to commercial and private parcels and to both developments and existing lots of record. The removal of existing solid fences and rows of Monterey Pine trees, which block views of the river and the mountains, is encouraged.

CVMP Policy 56.2.3: Whenever street lighting is used in the Valley, it shall be designed to promote traffic safety and be unobtrusive and harmonious with the local character. Such lighting must be constructed and located to illuminate only the intended area and prevent off-site glare.

Additionally, the County has established a hierarchy of sensitive areas, which reflects existing development, visually degraded areas, and key scenic features. The hierarchy is outlined in the Carmel Valley Visual Study (CVVS), which establishes the guidelines for critical, significant but non-critical, and non-critical viewsheds as defined below.

Critical Viewsheds. Critical viewsheds is defined as one of the few viewsheds in the Carmel Valley, which if altered, would greatly change the perceived rural character of Carmel Valley for the majority of viewers when viewing from public viewpoints. The CVMP indicates that further development in critical viewsheds should be prohibited unless it creates a substantial hardship on property owners. The CVVS identifies the following resources as Critical Viewsheds:

- Undeveloped ridges to the south and west of the public vista points on Laureles Grade Road;
- The unlighted nightscape where starlight and moonlight illuminate landforms, horizon, and vegetation;
- The Palo Corona and San Carlos Ranch frontal slopes forming the south side of lower Carmel Valley viewed by Highway 1 or Carmel Valley Road;
- Views of the Carmel River and its vegetation;
- Agricultural open space on the Carmel Valley floor;
- The palisades on the south side of the Valley along the Carmel River east of Robinson Road; and
- Redwood groves in Robinson and Garzas Canyons.

Significant but Non-Critical Viewsheds. Significant but Non-Critical Viewsheds are defined as including features of the viewshed, which may lend rural character to Carmel Valley, or which add beauty but are not critical due to limited scope or visibility in the viewshed or small stature, or ability to be screened. Generally, these may be structures, individual trees, small groves, man-made landscapes, which though replaceable, contribute to the perception of Carmel Valley as a rural country place. According to the CVMP, development in significant viewsheds should be minimized and generally discouraged. The CVVS identifies the following resources as Significant but Non-Critical Viewsheds:

- The Carmel Stone Quarry north of Carmel Valley Road opposite Brookdale Drive;
- The eucalyptus grove near the intersection of Boronda and Carmel Valley Roads; Golf courses, including Rancho Canada, Carmel Valley Golf and Country Club, and Carmel Valley Ranch;
- Oak trees along Carmel Valley Road and Laureles Road;

to minimize alteration of views from Carmel Valley Road. The remaining 94 market rate lots are not located along ridgelines, but situated so they will not block views of any scenic viewshed, river, or distant hills. Lighting on the project site will be designed to ensure traffic safety and constructed in an effort to illuminate intended areas to prevent offsite glare impacts.

As indicated previously, the proposed project will require approval of a variance for any development on slopes in excess of 30 percent. This variance, which is typically granted to low-density developments such as the proposed project, is being requested for the development of roadways serving residential lots and will allow for flexibility in road placement to accommodate varying terrain (resulting in less cut and fill slopes), and the protection of sensitive biological resources and viewsheds. As stated in the CVMP, exceptions may be granted for the relaxation of roadway standards under CVMP Policy 39.2.7 (Section 4.6, Traffic and Circulation). The design of the project roadways is in accordance with the stipulations of CVMP Policy 39.2.7, in that the roadways are designed to minimize environmental impacts.

Therefore, the proposed project will be consistent with the policies of the CVMP and the CVVS.

4.12 Population, Housing, and Employment

The 1990 General Plan Guidelines issued by the California Office of Planning and Research affirmed that the jobs/housing balance is based on the premise that commuting, the overall number of vehicle trips, and the restaurant vehicle miles traveled can be reduced when sufficient jobs are available locally to balance the employment demands of the community and when commercial services are convenient to residential areas.

According to the Tools for Assessing Jobs-Housing Balance and Commute Patterns in the Monterey Bay Region, prepared by the Association of Monterey Bay Area Governments (AMBAG), the region as a whole is anticipated to experience a steady increase in population, jobs, and housing for the next twenty years.

Information contained within this section was obtained from a variety of sources including the U.S. Census Bureau, the California Department of Finance, the Center for Demographics, and AMBAG.

4.12.1 Environmental Setting

Population

According to the U.S. Census, the population of Monterey County was 401,762 for the year 2000, a 13 percent increase from the 1990 Census. The project site is located within Census Tract 116 which has a population of 7,349 persons, approximately 2 percent of the total population of the County. In 1990, Census Tract 116 had a population of 6,982, thus Census Tract 116 experienced approximately 5 percent growth in population between 1990 and 2000. According to AMBAG, Monterey County is projected to experience a slightly higher percentage increase in population and housing than employment within the next two decades. According to the Transportation Agency for Monterey County (TAMC), the County as a whole will experience a population increase of nearly 30 percent by the year 2020, it is forecasted that approximately one-third of this increase is attributed to the redevelopment of Fort Ord.

Housing

The County, through their General Plan, is responsible for determining where future growth can be accommodated. Of crucial importance is that land designated for residential units grows at a rate that will keep pace with the County's population growth. According to the Carmel Valley Master Plan (CVMP), the population of Carmel Valley has grown at a rate of about 4 percent per year while the housing inventory has grown at a rate of 8 percent per year. However, this is not necessarily reflective of a housing surplus, since in Carmel alone, 30 percent of the homes are second homes or vacation properties.

According to the County General Plan, the availability of decent and affordably priced housing units in close proximity to jobs and services is essential for assuring a high quality of life. Information regarding regional commute patterns was obtained from AMBAG's travel demand model, which generates travel forecasts utilizing land use/socio-economic data and transportation assumptions.

According to the U.S. Census, Tract 116 had a work force population of 2,980 persons. Table 4.12-1 below summarizes the commute characteristics of Tract 116.

Table 4.12-1: Commute Characteristics for Census Tract 116

Transportation Mode	Persons
Alone in car or truck	2,092
Motorcycle	8
Carpool	384
Public Transportation	0
Bicycle	35
Walked	9
Worked from home	452
Source: U.S. Census Bureau, Census 2000.	

Employment

The labor force within Monterey County and the project area (Census Tract 116) experienced growth between the years 1990 and 2000. According to the 2000 Census, approximately 42 percent of the project area's population, 3,100 persons, were in the workforce. Similar to employment characteristics of Monterey County as a whole, the majority were employed in management, professional, or related occupations (see Table 4.12-2) and the primary occupational industry was categorized as educational, health, and social services (see Table 4.12-3).

Table 4.12-2: Employment by Occupation for Census Tract 116

Occupation	Persons Employed	Percent of Labor Force
Management, Professional, and Related Occupations	1,621	53.7
Service Occupations	392	13.0
Sales and Office Occupations	678	22.5
Farming, Fishing, and Forestry Operations	49	1.6
Construction, Extraction, and Maintenance Operations	154	5.1
Production, Transportation, and Material Moving Occupations	125	4.1
Total	**3,091**	**100**
Source: U.S. Census Bureau, Census 2000.		

Table 4.12-3: Employment by Industry for Census Tract 116

Industry	Persons Employed	Percent of Labor Force
Agricultural, forestry, fishing, and hunting and mining	92	3.0
Construction	192	6.4
Manufacturing	116	3.8
Wholesale Trade	72	2.4
Retail Trade	280	9.3
Transportation, warehousing, and utilities	73	2.4
Information	106	3.5
Finance, insurance, real estate, and rental and leasing	325	10.8
Professional, scientific, management, administrative, and waste management services	542	18.0
Educational, health, and social services	603	20.0
Arts, entertainment, recreation, accommodation and food services	332	11.0
Other services (except Public Administration)	160	5.3
Public Administration	126	4.2
Source: U.S. Census Bureau, Census 2000.		

According to AMBAG, the number of jobs within the County will increase from 183,756 to 229,130 by 2020, an increase of 25 percent over a 20-year period. The top three sectors that will experience the greatest growth are: the service sector (61 percent), non-durable manufacturing (47 percent), and retail trade (46 percent).

4.12.2 Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant impact upon population, employment, and housing if it will:

- Induce substantial population growth in an area either directly or indirectly;
- Displace a substantial number of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Less than Significant Impact - Population Generation: According to the State Department of Finance, the average household size for the project area is 3.177 persons per household. Utilizing this

data, the proposed project will result in an additional 350 persons within the project area. Due to the phased nature of the project, the project area will gradually be accommodating the population increase. According to AMBAG, Monterey County is expected to experience a thirty-five percent growth increase between the planning years 2000 and 2020. Specifically, Carmel Valley is anticipated to experience an eleven percent growth increase between the planning years 2000 and 2020, which is equal to a population increase of approximately 2,000 persons. The project is consistent with the CVMP and zoning ordinance designations for the site; thus, the population growth resulting from the implementation of September Ranch Subdivision project should be accommodated within AMBAG's population forecasts. Therefore, no significant population impacts will occur as a result of project implementation.

Less than Significant Impact - Development of Residential Units: The September Ranch project will not result in displacing any existing housing or populations. There two existing residences on the property, that provide employee housing for the employees of the onsite equestrian facility. These residences will remain on the project site.

As discussed in Section 3 of this Draft REIR, the objective of the project is to provide market rate and low to moderate-income housing in accordance with the existing County ordinances and the CVMP. Therefore, the September Ranch project will provide additional housing opportunities in Carmel Valley. AMBAG's Regional Housing Needs Assessment provides a recommended allocation of housing to keep pace with forecasted population and employment growth; however, housing development within the project area is guided by the policies set forth in the CVMP. The CVMP establishes a 20-year total of 1,310 existing and newly created lots. These include 572 existing lots of record as of December 9, 1986 and 738 new lots to be created subject to an allocation and subdivision evaluation system. The CVMP provides for a phasing system tied to the land subdivision process in which development will be subject to an allocation system. The average annual rate of allocation will be limited to 37 lots (738 lots/20 years). Subdivisions may be approved for up to the maximum number of lots for the life of the tentative map. However, as a general policy, no more than 25 lots per year may be developed in any subdivision. It is up to the Board of Supervisors discretion to authorize additional units per subdivision. Lots or condominium units created and designated for low and moderate-income individuals are exempt from the annual allocation system, but will be subtracted from the 20-year quota. The September Ranch project will be phased over several years to meet the development criteria set forth in the CVMP

In addition, the County of Monterey recognizes the need for housing development that is financially accessible for persons of low or moderate incomes through their adoption of the Inclusionary Housing Ordinance. According to the 2002 Regional Transportation Plan (RTP), prepared by the TAMC, Monterey County has traditionally had a relatively small base of high-paying jobs and, in comparison, the project area's median household income is 26 percent greater than the County as a whole. Moreover, according to the census, County-wide, of those persons with a mortgage, 53.9 percent spend 25 percent or more of their income towards monthly owner costs, whereas within the project area 23 percent spend 25 percent or more of their income on monthly ownership costs. According to the State Department of Housing and Community Development, when 25 percent or more of individual's or family's gross income is allocated towards housing, it is considered overpayment. Thus, while the need for inclusionary housing within the project area may not be as great as within the County, the project's provision of such housing will assist in lessening the burden County-wide.

Less than Significant Impact - Employment: The two major economic sectors within the County of Monterey are agriculture and tourism. Employment associated with such economic sectors paired with the seasonality of such sectors, in part contributes to a higher than average unemployment rate in the County in comparison to the State average. According to the TAMC, the County traditionally has a relatively small base of high-income jobs. The September Ranch Subdivision project will result in the creation of jobs both during the short-term construction and the long-term operational phase of the project. In the short-term, construction related jobs will be created and in the long-term, jobs will be created in response to an increased demand for services. Overall, the September Ranch Subdivision project is not expected to have a significant impact on employment.

The 2002 Plan RTP indicates that employment outpaces the housing within Carmel Valley and the greater project area. Thus, it is important that low- to moderate-income housing be provided throughout the County for employees. The proposed project will provide 15 units of inclusionary housing. As indicated previously, approximately 34 percent of the population within the project area (Census Tract 116) commute to work. Therefore, it is likely that workers travel to the more urbanized areas such as the Monterey Peninsula or the Salinas Valley.

As for the remaining 94 lots, given the anticipated range of the lots and the cost of building, it is estimated that the prospective purchasers will have substantial incomes and thus their housing choices are not dictated by the location of employment centers or their need to find sufficient employment.

Consistency with Relevant Plans and Policies

There are no CVMP policies that directly relate to population, housing, and employment; however, the CVMP does outline the quota and allocation system that guides residential development within the Master Plan Area.

The allocation process is base upon the following criteria:

- The quota is for the 20-year lifespan of the plan (base year 1987).
- The 20-year quota will be a maximum of 1,310 new and existing lots of record.
- Five hundred seventy-two buildable residential lots or record (572 buildable lots of record including 150 lots at Carmel Valley Ranch) may be built at any time and are not subject to the allocation system.
- The 738 lots remaining in the quota will include both residential construction on new lots and me low and moderate income housing units.
- The average yearly rate of allocation will be limited to 37 lots (738 lots divided by 20 years).
- Any newly constructed low and moderate income housing will be subtracted for the yearly quota according to the plan policies and the new annual allocation will be calculated.
- Subdivisions may be approved for up to a maximum number of lots for the life of a tentative map.
- No more than 25 lots per year may be created in any subdivision.
- Regulation mechanisms will be incorporated into the subdivision approval process. Administration will be the responsibility of the County Planning Department.
- Lots not built in their year of allocation may be built upon in any subsequent year.

In addition to the CVMP policies, the Monterey County Inclusionary Housing Ordinance establishes the following objectives:

- The shortage of housing affordable to low and moderate income persons is a regional problem that requires the cooperation and coordination with other governmental entities within the County in mutually solving the problem
- To meet the housing needs of all types of low and moderate income groups in a manner that is economically feasible and consistent with their needs.
- The purchase or rental price of housing for persons of income levels above the moderate.
- Income level shall not be increased as a result of the requirements of this ordinance.
- To provide housing opportunities in all planning areas of the county for low and moderate income households.
- To provide housing opportunity for low and moderate income households currently residing in Monterey County, on a priority basis.

Consistency Analysis: The proposed project will result in construction of 94 market rate single-family residential homes and, in accordance with the Monterey County Inclusionary Housing Ordinance, 15 units of inclusionary housing. The provision of the inclusionary housing units will provide housing opportunities for persons of low- or moderate-income in the County; as a whole, the majority of this population is considered to overpay for housing costs. Moreover, the project will be implemented in accordance with the quota and allocation system as outlined in the CVMP.

4.13 Public Services and Utilities

This section is based upon consultation with the individual service and utility providers that will serve the project site. Specifically, this section addresses fire services/emergency medical services, sheriff services, educational services, solid waste disposal, electrical service, natural gas service, and telephone service. Other services such as wastewater or water supply are discussed in their respective sections of this Draft REIR.

4.13.1 Fire/Emergency Medical Services

Environmental Setting

Staff and Equipment

The Carmel Valley Fire Protection District (CVFPD) provides fire services to the September Ranch Subdivision project area. The CVFPD, Mid-Valley station located at 8455 Carmel Valley Road is the primary fire service provider within the project area. The Mid-Valley station is a full service fire station with structural, wildland, rescue and paramedic ambulance apparatus, and personnel. Specifically, the Mid-Valley station is equipped with two structure engines, one water tender, one wildland engine, one rescue unit, two paramedic ambulances, and one Kawasaki mule especially equipped for wilderness response in a full trailer with specialized equipment, two command vehicles, and two utility/staff vehicles. The CVFPD as a whole maintains six structure engines, five wildland engines, two water tenders, three rescue units, four ambulances, six command vehicles, three Kawasaki mules, one air breathing support trailer, two utility trailers, and four utility/staff vehicles.

Mutual Assistance Programs

The CVFPD has automatic aid response from the Cypress Fire Station and Rio Road Station for structure response. The CVFPD also has automatic aid from the Salinas Rural Fire Station with air ambulance within designated landing zones. In addition, CVFPD has mutual aid with all the fire departments in Monterey County and the response matrix is pre-programmed into the 911 emergency dispatch system.

Design Considerations

New structures within the proposed project will be required to meet a number of design criteria including fire flow, water storage, hydrant space, and access in order to insure maximum protection from the hazards of fire. The proposed preliminary map indicates that storage tanks will be provided, although the specific capacity and design have not been developed.

The water distribution system will be designed to meet Uniform Building Code (UBC) requirements, which take into account the size of planned structures. The Code requires water flow for fire fighting purposes of not less than 1,500 gallons per minute (gpm) for 2 hours at 20 psi residual for residences up to 3,600 square feet. For residences up to 4,800 square feet, the requirement is 1,750 gpm. The CVFPD recommends 2,000 gpm for structures up to 6,200 square feet.

Project design will meet national standards and California ordinances regarding roofing materials, defensible space, and the distance of ornamental vegetation from buildings.

Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project will result in a significant impact to fire and/or emergency medical services if it will:

- Substantially reduce acceptable service ratios or other adopted performance objectives, or decrease a response times of the Fire Department; or
- Require the construction of new facilities to serve the project.

Less than Significant Impact - Increased Demand for Fire Services: The introduction of 109 residential units will result in generating a greater demand for fire and emergency response services. As identified in the CVFPD Capital Improvement Plan (CIP), currently, there is a need to expand the Mid-Valley Fire station to accommodate administrative and on-duty staff as well as fire apparatus. The September Ranch Subdivision project will exacerbate the need for additional space. According to the CVFPD, a portion of the project will require annexation into the District; these annexation fees will assist with funding projects identified in the CIP for the Mid-Valley Fire Station.[1] Therefore, no significant impacts to fire and/or emergency services will occur with project implementation.

Consistency with Relevant Plans and Policies

There are no Carmel Valley Master Plan (CVMP) fire service policies applicable to the proposed project.

4.13.2 Sheriff Services

Environmental Setting

Staff, Equipment, and Resources

The Monterey County Sheriff's Department (MCSD) services the proposed project area. The nearest sheriff's station that will serve the project site is the Coastal Patrol Station located at 1200 Aguajito Road in Monterey. Currently, there are four to six officers available to respond from the station and one or two officers that can respond from the beat area. The target ratio established by the MCSD is 1 officer per 1,000 people; currently the Department is not meeting this target. Equipment available to the MCSD includes patrol cars, 4-wheel drive patrol units, and search and rescue units.

Response Time and Crime Statistics

Principle crimes reported within the project area include burglary, theft, trespassing, and vehicle code violations. The average response time is 16 minutes, which is considered about average response time throughout the MCSD.

[1] Personal communication, Chief Sydney Reade, Carmel Valley Fire Protection District, September 22, 2003.

Mutual Aid Agreement

The MCSD engages in mutual assistance programs with both the California Highway Patrol and the local fire agencies.

Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant impact upon sheriff services if it:

- Increases in development, population, size of events, or response times that will require expanding the existing staff and equipment levels to maintain an adequate level of protection throughout the area; or
- Results in a substantial amount of emergencies that cannot be adequately served by the available MCSD personnel or equipment.

Less than Significant Impact - Increased Demand for Sheriff Services: Implementation of the proposed project will increase the demand for sheriff services within the project area. Typical of residential developments, the project will result in an increase of burglary, thefts, trespassing, and vehicle code violations. Therefore, there is the potential that due to limited staff and limited access to the site, there will be an increase in response times in addition to the increase in calls and workload. According to the MCSD, increased staffing will be needed to serve the project site.[2] However, the County assesses fees to offset the service costs associated with new development. In addition, the project will include the following design features to reduce impacts to sheriff services:

- Levels of lighting, although muted to conform to the rural residential character of the setting will be incorporated into the project design to facilitate patrol performance;
- Landscaping will be designed so as not to limit visibility of homes for patrol purposes and residential security;
- Housing numbers will be consistent and a street guide will be provided at the entrance of the project;
- Numbers on the homes will be at least four inches in size and provide a light on dark or a dark on light contrast for visibility;
- Doors surrounded by glass will be equipped with double deadbolts. Single-cylinder deadbolts will be placed on all other doors. Sliding glass doors will have auxiliary locking devices; and
- Residents who intend to incorporate alarm systems into their homes will be advised of the Sheriff's Department and Communication Department policies and asked to consult with representatives of these two departments prior to installation of such systems. According to County Ordinance, alarm systems must be registered with the Sheriff's Department prior to installation.

[2] Personal communication, Commander Lonnie Huffington, Monterey County Sheriff's Department, February 25, 2003.

Consistency with Relevant Plans and Policies

There are no CVMP sheriff service policies applicable to the proposed project.

4.13.3 Educational Services

Environmental Setting

Enrollment and Capacity

The proposed project is within the service boundaries of the Carmel Unified School District (CUSD), which provides K-12 education. The CUSD has two elementary schools serving kindergarten through fifth grade. River Elementary School is located in Carmel and Tularcitos Elementary School is located in Carmel Valley Village. The CUSD has derived formulas for projecting the number of students generated by additional units using a formula of 0.081 students per residential unit. These rates include 0.081 for kindergarten through fifth grade, 0.045 for students in grade six through eight, and 0.053 for grades nine through twelve. These rates are low compared to the statewide yield factor of 0.8 for kindergarten through twelfth grade. The public schools that serve the proposed project are the Tularcitos School (K-5), Carmel Middle School (6-8) and Carmel High School (9-12). According to the CUSD staff, the middle school is near capacity and the high school is at capacity.

Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant impact upon education services if:

- Existing or planned future facilities are not adequate to service the proposed project; or
- The project will require the expansion or construction of facilities that will have a physical impact on the environment.

Less than Significant Impact - Increased Demand for School Services: According to CUSD student generation rates, the proposed project is anticipated to result in twenty[3] new students within the project area. As noted, the middle school is currently near capacity and the high school is at capacity. The introduction of new students will result in placing further demands upon school services.[4] The proposed project is in compliance with Government Code Section 65965 (3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), which requires the project applicant, to pay the state mandated fee presumptive payment based on square footage of residential construction[5]. This fee "is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization." Therefore, no significant impacts to educational services will occur as a result of the proposed project.

[3] This is based upon a generation factor of 0.18 students per household (K-12).

[4] Personal communication, Judy Long, Carmel Unified School District, October 25, 2003.

[5] Fee determined by the findings of the annual school's Facilities Needs Analysis.

Consistency with Relevant Plans and Policies

There are no CVMP school service policies applicable to the proposed project.

4.13.4 Solid Waste

Environmental Setting

Solid Waste Service

Within the project area, solid waste pick up services are provided by Waste Management, Inc. Solid waste generated within the proposed project area will be transported to the Monterey Landfill and recycling facilities located at 14201 Del Monte Boulevard in Marina. According to the Monterey Regional Waste Management District (MRWMD), the landfill and recycling facilities are anticipated to operate until the year 2092. The remaining landfill capacity is 22,600,000 tons. Currently, the landfill receives 728 tons per day.

California law required cities and counties to divert 50 percent of all solid waste from landfills by January 1, 2000 by implementing source reduction, recycling and composting activities (Public Resources Code 41780, AB 939). The amount of solid waste from which the required reduction was measured was the amount existing on January 1, 1990 (PRC 41781.2.c). Adjustments are allowed on the basis of population changes. Therefore, a project would not have a negative impact on the 50 percent waste reduction requirement if it does not generate waste at a rate greater than 50 percent of the 1990 rate.

In order to meet the waste reduction goal established in January 2000, a curbside recycling program is available to residential customers in the unincorporated project area of Carmel Valley. Collection is provided for newspapers, glass, plastic, and metal containers, cardboard, and yard waste.

Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project will result in significant solid waste impacts if:

- The existing facilities do not have adequate capacity for the increase in solid waste; or
- The disposal of project-related solid waste will result in a significant reduction in the planned life span of a landfill.

Less than Significant Impact - Increased Solid Waste Generation: The proposed project will incrementally increase the amount of solid waste being hauled to the Monterey Peninsula landfill and recycling facility. It is estimated that the project will result in generating 0.40 tons per day of solid waste. However, according to the MRWMD, the proposed project will have a negligible impact on the lifespan of the landfill.[6] Moreover, the proposed project will be in compliance with the Waste

[6] Personal communication, Richard Shedden, Monterey Regional Waste Management District, February 20, 2003.

Management Act of 1989 (AB 939), which requires the project comply with the County's source reduction, recycling, and composting efforts. Therefore, although the project may result in an increase in solid waste generation, there is the opportunity for the project to divert and recycle solid waste.

Mitigation Measure

To further reduce the project's negligible impacts on solid waste disposal, the MRWMD identified the following mitigation measure:

4.13.4-1: The proposed project shall participate in curbside collection of bottles, cans, paper, and yard waste.

The proposed September Ranch Subdivision project will have a less than significant solid waste impact and with the inclusion of the mitigation measure above, the proposed project's negligible impacts will be further reduced.

Monitoring Action

Prior to the issuance of occupancy permits, the applicant shall provide verification to the County of Monterey Planning and Building Inspection Department that a licensed recyclables hauler has been contracted to service the project area.

Consistency with Relevant Plans and Policies

The CVMP does not contain any solid waste disposal policies that are applicable to the proposed project.

4.13.5 Recreation Services

Environmental Setting

The project site is bordered on the northwest by the 748-acre Jacks Peak County Park and on the west with the 15-acre Roach Canyon Open Space Area. Both Jacks Peak County Park and the Roach Canyon Open Space Area are operated and maintained by the Monterey County Parks Department (MCPD). In all, the MCPD operates and maintains 19,400 acres of land and water for public recreation.

Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project is considered to have a significant recreation impact if:

- The existing facilities do not have adequate capacity; or
- The project will require the construction of new facilities that will have an impact on the environment.

Potentially Significant (Public Services and Utilities Impact 1) - Increased Demand for Recreational Services: The proposed project will result in introducing approximately 350 people into the project area, which in turn will result in an increased demand for recreational facilities. The County currently operates and maintains 19,400 acres of land and water for public recreations, which will serve the future recreational needs of September Ranch residents. However, according to Monterey County Code Section 19.12.010, residential development applicants are required to provide land dedication or pay in lieu fees to provide active park and recreation improvements that reasonably serve the residents of new subdivisions. The standard formula for determining the amount of land to be dedicated per single-family dwelling unit is as follows:

- 0.003 acres/person x 3 persons/dwelling unit x the number of proposed dwelling units = the acres of land dedicated.

Thus, applying this formula, the September Ranch project is required to dedicate 1 acre of land for active park and recreational land uses.

Project implementation will result in retaining approximately 783 acres of the 891-acre project site as open space. As identified on Exhibit 3-3, Site Plan, of this Draft REIR, dispersed throughout the project site are the open space/common areas that are accessible to both the market-rate and inclusionary housing units. However, while the County recognizes the importance of more passive recreational land uses, the County does not consider open space and recreational trail lands as applicable land dedications under Section 19.12.010. Given this, the MCPD recommends that the applicant comply with Section 19.12.010 in the form of a fee in lieu of dedicated land. However, under Section 19.12.010(I), the project may be applicable for improvement credits. Specifically, if the applicant provides park and recreation improvements to the land, the value of the improvements together with any equipment located thereon shall be a credit against the payment of fees or dedicated land.

Additionally, implementation of the proposed project would result in the need to establish future trail easements onsite in an effort facilitate recreational opportunities, such as riding and hiking throughout the project area. The County has expressed that it is receptive to acquiring additional trail routes in the vicinity of Jacks Peak County Park and access to the Canada Woods North and Monterra Ranch trail routes under the appropriate acquisition mechanism.

Mitigation Measures

4.13.5-1: The applicant shall either dedicate land or pay an in-lieu fee, which will be calculated after the tentative map has been approved and prior to recordation of the final map.

4.13.5-2: The applicant, in coordination with the MCPD, shall dedicate trail easements to the County for the connection of future trails with existing trails. The new public recreational trail shall, at a minimum, accommodate future and feasible connections to Canada Woods North and Monterra Ranch trail route and the possibility of other regional trail links to facilitate a regional trail system as outlined in the Greater Monterey Peninsula Area Plan.

4.13.5-3: Any agreed upon trail easement/alignment shall be identified on the tentative map for approval and on the Final Map for recordation.

Implementation of these mitigation measures will reduce the project's recreation services impacts to less than significant.

Monitoring Action

Prior to the recordation of the final subdivision map, the applicant shall coordinate with the MCPD on the dedication of land and/or the payment of in lieu fees and the location of trail easements and identify such easements on the final subdivision map.

Consistency with Relevant Plans and Policies

The following CVMP policies are applicable to the proposed project:

CVMP Policy 51.2.7: Recreation in lieu fees obtained from minor and standard subdivisions should be used to acquire or develop land for active recreation uses.

CVMP Policy 51.2.11: Active recreation areas should be located at or within close access to the three development areas. All valley residents shall have nearby access to hiking and riding trails and small neighborhood open areas or parks.

Consistency Analysis: The proposed project will provide adequate open space and recreational amenities in accordance with the County Zoning Ordinance; thus, the applicant will not be required to pay in lieu fees. The September Ranch Subdivision project will allow for the dedication of the necessary easements to the County for connections to existing trails, thereby providing local access to hiking and riding trails and links to the County park system.

4.13.6 Energy Resources

Environmental Setting

Electrical and Natural Gas Services

Pacific Gas and Electric (PG&E) Company supplies electricity and natural gas to the project area. Existing electrical facilities include overhead lines that traverse Carmel Valley Road and subterranean transmission and distribution facilities located at the intersection of Carmel Valley Road and Valley Greens Drive. Existing natural gas facilities in the project area include an 8-inch high-pressure gas main on the north side of Carmel Valley Road.

Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project will result in significant energy resources impacts if:

- Electrical/natural gas supplies are not available to meet the demand of the project;

- The project will require the construction of new electrical/natural gas facilities or the expansion of existing facilities, which will lead to significant environmental effects; or
- The existing provider cannot serve the project.

Less than Significant Impact - Increased Demand for Electrical and Natural Gas Services: The September Ranch Subdivision project will create a demand for approximately 54.10 to 261.60 therms per day of natural gas and 2,038.30 to 3,237.30 kilowatts per hour per day of electricity depending on the season.[7] According to PG&E, the project will not result in any impacts to PG&E's services.[8] Applications for service will be required for both electrical and natural gas service. Once an application and payment is received, planning for gas and electrical services can begin when tentative subdivision plans are approved. PG&E estimates that engineering of structures can be developed within four weeks.

Consistency with Relevant Plans and Policies

The CVMP does not contain any electrical and natural gas policies that are applicable to the proposed project.

4.13.7 Phone Services

Environmental Setting

SBC would provide telephone service to the project area. The September Ranch Subdivision project site is within SBC's Carmel wire center boundary and lies within SBC's field territory. Currently, SBC maintains lines along Carmel Valley Road.

Project Impacts

Impact Analysis and Mitigation Measures

Standards of Significance

The proposed project will result in significant phone service impacts if:

- The project will require the construction of new facilities or the expansion of existing facilities, which will lead to significant environmental effects; or
- The existing provider cannot serve the project.

Less than Significant Impact - Increased Demand for Phone Services: The proposed September Ranch Subdivision project will result in an increased demand for SBC's telephone services. The increased demand may require installation of additional cable to accommodate project demands. Expenses for connection to the existing system and onsite services are the responsibility of the applicant. SBC will work with the developer to identify the customer needs and SBC's requirements, such as rights-of-way, easements, and any special construction. SBC's activities are governed in part

[7] Based upon a low of 0.5 and a high of 2.4 therms per day per dwelling unit and a low of 18.7 and a high of 29.7 kilowatts per hour per day per dwelling unit.

[8] Personal communication, Jose Saldana, PG&E, January 30, 2004.

by the California Public Utility Commission Tariff Schedule No. A2; as such, SBC will apply the tariff rules to the project. According to SBC, project implementation will not result in a negative impact upon existing services or their future ability to provide services to the project area.[9]

Consistency with Relevant Policies

The CVMP does not contain any phone service policies that are applicable to the proposed project.

[9] Personal communication with Mark Groner, SBC, September 2003.

SECTION 5
CUMULATIVE IMPACTS

5.1 Cumulative Impacts

Section 15130 of the CEQA Guidelines requires consideration of cumulative impacts within an EIR. Cumulative impacts are defined as two or more individual effects which, when considered together, are considerable or which, compound or increase other effects. The individual effects may be changes resulting from a single project or a number of separate projects. The cumulative impact from several projects is the change in the environment, which results from the projects when added to other closely related projects. In identifying projects which may contribute to cumulative impacts, the CEQA Guidelines allow the use of either a specific list of past, present, and reasonably anticipated future projects, providing related or cumulative impacts, including those that are outside the control of the lead agency. The CEQA Guidelines also allow a summary of projections contained in an adopted General Plan or related planning document, which is designed to evaluate regional or area-wide conditions.

The following is an evaluation of the impacts generated from the implementation of the September Ranch project when considered in conjunction with development forecasts based on the buildout of the County's General Plan.

In addition to the growth projections contained within the County's General Plan, the Carmel Valley Master Plan (CVMP) has established a method of managing growth within the planning area by establishing a maximum number of lots, which may be created on an annual basis. Additionally, the CVMP has established a 20-year total of 1,310 existing and newly created lots. These include 572 existing lots of record as of December 9, 1986 and 738 new lots to be created subject to an allocation and subdivision evaluation system. The CVMP provides for a phasing system tied to the land subdivision process in which development will be subject to an allocation system. The average annual rate of allocation is limited to 37 lots (738 lots/20 years). Subdivisions may be approved for up to the maximum number of lots for the life of the tentative map. However, as a general policy, no more than 25 lots per year may be created in any one subdivision. It is up to the Board of Supervisors discretion to authorize additional units per subdivision. Lots or condominiums created and designated for low- and moderate-income individuals are exempt from the annual allocation system, but will be subtracted from the 20-year quota.

In accordance with Section 15130(b) of the CEQA Guidelines, "the discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, the discussion need not provide as great [a level of] detail as is provided for the effects attributable to the project alone. The discussion should be guided by standards of practicality and reasonableness, and should focus on the cumulative impact to which the identified other project contribute rather than the attributes of other projects which do not contribute to the cumulative impact." The cumulative impact discussion is organized by each of the environmental issues evaluated in Sections 4.1 through 4.13 of this Draft REIR.

5.1.1 Cumulative Impact Analysis

Land Use and Planning

The cumulative land use compatibility influence area includes the project site and the immediate surrounding area. Consistent with the land use and zoning designations and densities allowed within the General Plan, cumulative development will contribute to the conversion of open space to urban development within the Carmel Valley Planning Area and within the surrounding unincorporated County lands. The CVMP contains policies that restrict commercial uses to one of the four existing commercial centers. Additionally, to preserve the rural character of the Planning Area, the CVMP contains policies that encourage open space and low-density residential development. Consequently, the project, in combination with cumulative projects, is expected to develop compatible land uses in the project area. As with the September Ranch project evaluated in this Draft REIR, each of the related cumulative projects will be subject to environmental review to determine consistency with the County of Monterey General Plan, the CVMP allocation criteria, the County Zoning Ordinance, and other regional plans. Thus, the September Ranch Subdivision project is anticipated to have a less than significant cumulative land use and planning impacts.

Mitigation Measures

No mitigation measures are required.

Geology and Soils

Soils and geologic influences are very specific and there is little, if any, cumulative relationship between future development on the project site and the development of cumulative projects in the Planning Area. Implementation of the proposed project and development of other cumulative projects may expose future populations to seismic hazards (e.g., strong ground shaking) and would be required to comply with the Uniform Building Code (UBC) and other seism safety standards. Impacts associated with seismic hazards are site specific. However, adherence to the UBC and other relevant seismic safety standards for new construction and ongoing provisions for emergency preparedness and response are anticipated to reduce such risk to an acceptable level, on a project-by-project basis. Therefore, the September Ranch Subdivision project in conjunction with other projects or conditions will not result in a cumulative impact to geology and soil resources.

Mitigation Measures

No mitigation measures are required.

Water Supply and Availability

According to the hydrogeologic report prepared by Kennedy/Jenks for the proposed project, the current metered pumping rate at the site is 110 acre-feet per year (AFY). The September Ranch Subdivision project is forecasted to have a water demand of 57.21 AFY at buildout; thus, project implementation will result in a reduction in water demand at the project site. The rainfall records, estimated evapotranspiration, and infiltration indicate that the recharge into the September Ranch basin exceeds the projected water demand. The extra recharge is a potential rejected flow that is available for exchange with the Carmel Valley Aquifer (CVA). In addition, the September Ranch basin is considered to have limited connectivity with the CVA. As the project area experiences

cumulative growth there will be a greater demand for water, which will reduce the amount of water available for recharge; however, the project will not contribute to a loss of groundwater to the CVA. Since the September Ranch project will result in a reduction in water demand in comparison to the existing conditions, the project is not considered to have a significant cumulative water supply and availability impact.

Mitigation Measures

No mitigation measures are required.

Hydrology and Water Quality

Storm drain and erosion hazards will increase as result of cumulative development in the watershed. More specifically, development of urban uses within the watershed may result in an increase of contaminated surface water and impervious surfaces in the project area which, in turn, may increase the volume and rate of stormwater runoff. Extended periods of heavy rain have been known to cause extensive flooding in lower Carmel Valley. Therefore, flood hazards associated with the Carmel River will be increased due to the greater number of people and property exposed, as well as the potential for increased stormwater runoff. The CVMP policies, as identified in Section 4.4, Hydrology and Water Quality, of this Draft REIR can reduce the severity of hydrology and water quality impacts by requiring individual projects to implement stormwater controls as part of site development and project approval. To avoid peak flows and reduce post-project runoff to pre-project levels, the County requires onsite retention of stormwater. Additionally, similar to the proposed project, cumulative development will be required to implement Best Management Practices and comply with the National Pollution Discharge Elimination System Construction Activity Stormwater permit, County grading ordinances, and the Stormwater Pollution Prevention Program, all of which reduce construction-related hydrology and water quality impacts. Therefore, the September Ranch Subdivision project is considered to have a less than significant cumulative hydrology and water quality impact.

Mitigation Measures

No mitigation measures are required.

Wastewater Treatment and Disposal

The September Ranch Subdivision project will contribute to an increase in the amount of wastewater generated in the project area. Project implementation considers two scenarios for wastewater treatment and disposal: 1) an onsite package wastewater treatment plant (WTP), or 2) in the event that the project does not include construction and operation of an onsite WTP, wastewater flows generated by the project will be handled by the Carmel Area Wastewater District (CAWD). Under the first scenario, since wastewater treatment and disposal will be handled onsite, wastewater generated at the project site will not contribute to a greater cumulative impact upon public facilities. Presently, onsite wastewater systems serve the majority of lots in the Carmel Valley. There is the potential that cumulative developments will also include onsite wastewater systems. However, for those developments that do not, CAWD will be the service provider.

Under the second scenario, wastewater generated at the project site will contribute to a cumulative increase and a cumulative demand for CAWD services. The CAWD currently has a 3.0 million gallon per day (mgd) tertiary facility that is operating sufficiently below its capacity. As such, the addition of 0.04 mgd (32,400 gallons per day [gpd]) from the September Ranch Subdivision project is considered to be nominal. Moreover, as discussed in Section 4.5 of this Draft REIR, CAWD has indicated that an increase of wastewater flows available to be treated at CAWD's Phase II recycled water project, is considered an environmental benefit, since it will allow CAWD to provide more treated tertiary water to the Carmel Valley Lagoon[1]. Therefore, under this scenario, the project's cumulative wastewater impacts are considered to be a beneficial environmental impact.

Nitrate loading is also a concern in the CVMP area. The CVMP addresses the potential nitrate contamination from onsite wastewater systems through adoption and implementation of the Carmel Valley Wastewater Study. The report established a sewage capacity model through use of applications and design rates for the individual sub-basins within the CVMP area. The model is intended to mitigate sewage impacts to the Carmel Valley aquifer. Future development is limited by the established trigger mechanism of 25 mg/l. According to Monterey Peninsula Water Management District sampling, there is no increasing trend of nitrate contamination approaching the 25 mg/l trigger. In 1995, Questa Engineering prepared a nitrate loading assessment for the proposed project. The nitrate loading from the proposed onsite WTP and disposal system is estimated to be 391 grams per day, which constitutes 2.9 percent of the allowable loading under the Carmel Valley Wastewater Study and 1.1 percent of the allowable loading under the RWQCB criteria. Thus, the proposed project is not considered to have a significant cumulative nitrate loading impact and would not result in significant cumulative wastewater treatment and disposal impacts.

Mitigation Measures

No mitigation measures are required.

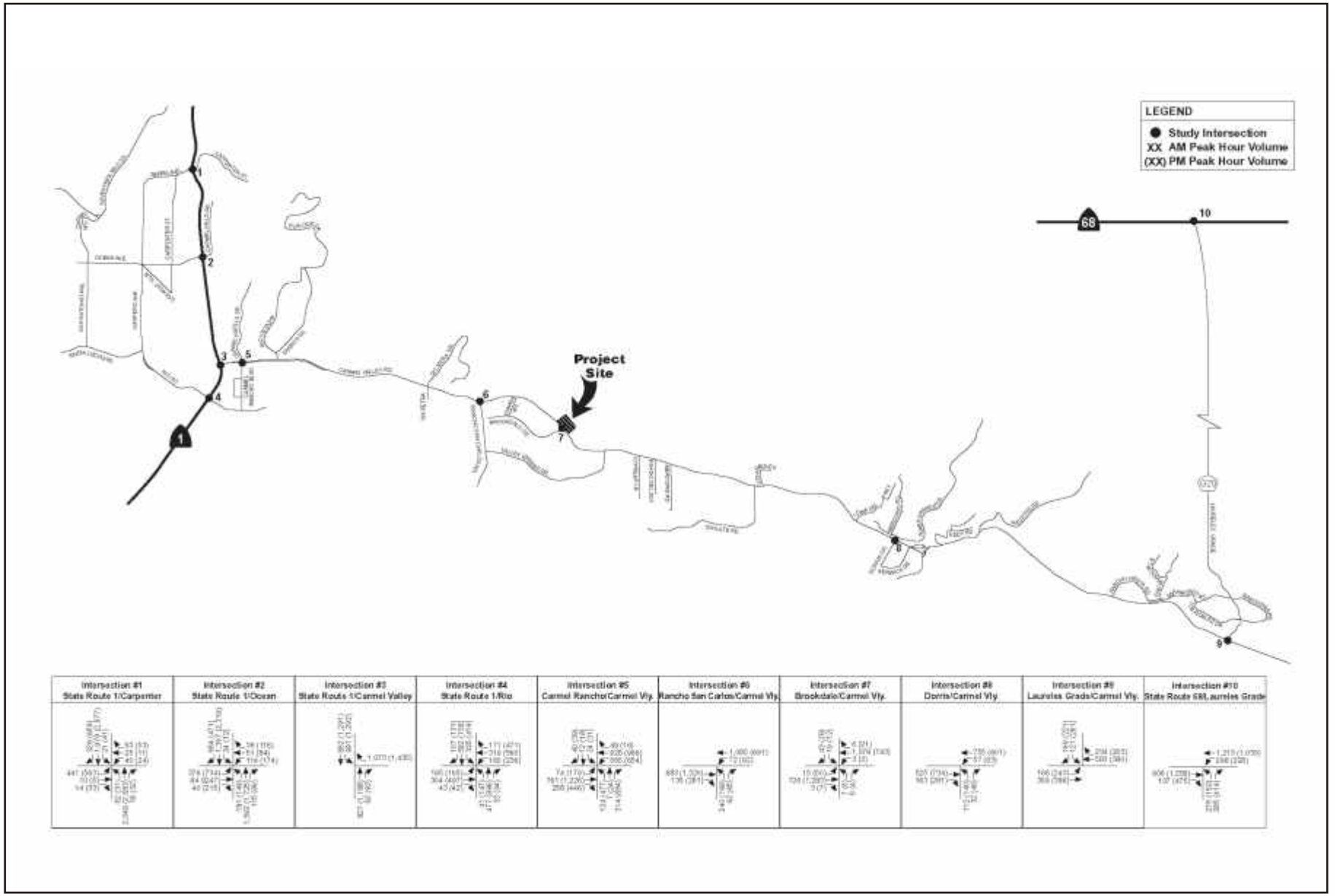
Transportation and Circulation

The Court of Appeal reversed the Superior Court judgment of traffic issues, finding that the 1998 Final EIR was adequate in its discussion of traffic impacts and mitigation. Nevertheless, since the number of projects approved and proceeding, and proposed traffic improvements and traffic conditions have changed since the 1998 Final EIR, TJKM provided an updated traffic analysis (see Section 4.6 of this Draft REIR), including an updated cumulative traffic analysis.

This scenario evaluates traffic conditions of the buildout of the area planned by the Year 2025 in accordance with the Monterey County general plan. The cumulative AM and PM peak hour volumes were forecasted and provided by Association of Monterey Bay Governments (AMBAG) staff. Exhibit 5-1 illustrates the forecasted peak hour turning movement volumes for the cumulative Year 2025 conditions.

Table 5-1 summarizes the intersection level of service (LOS) analysis results. Under the 2025 scenario, the intersections of Carmel Valley Road/Brookdale Drive/Project Driveway, Carmel Valley Road/Dorris Drive, and Carmel Valley Road/Laureles Grade were assumed to be signalized.

[1] Personal communication, Ray von Dohren, General Manager CAWD, April 15, 2004.



Source: TJKM Transportation Consultants, October 2004.

NORTH

NOT TO SCALE

Exhibit 5-1
Cumulative Turning Movement Volumes

Table 5-1: Cumulative Levels of Service

Intersection		Control	AM Peak		PM Peak	
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
1	Highway 1/Carpenter St	Signal	20.6	C	53.5	D
	- Utilizing 'overlap' for SB and WB RT, Modifying WB to have 1LT, 1TH, 1RT, Utilizing 'protected + permitted' on EB LT	Signal	14.6	B	28.6	C
2	Highway 1/Ocean Ave/Carmel Hills Dr	Signal	34.3	C	120+	F
	- Widening EB and WB approaches, Installing a SB TH Lane, Utilizing 'overlap' for SB and WB RT	Signal	28.7	C	15.8B	
3	Highway 1/Carmel Valley Rd	Signal	17.8	B	41.4	D
	- Modifying NB RT to a Shared TH/RT	Signal	12.5	B	11.6	B
4	Highway 1/Rio Rd	Signal	22.6	C	52.3	D
	- Utilizing 'overlap' for WB RT	Signal	19.9	B	33.1	C
5	Carmel Valley Rd/Carmel Rancho Blvd	Signal	14.0	B	24.1	C
6	Carmel Valley Rd/Rancho San Carlos Rd	Signal	7.8	A	8.4	A
7	Carmel Valley Rd/Brookdale Dr	Signal	6.7	A	7.7	A
8	Carmel Valley Rd/Dorris Dr	Signal	10.0	A	8.4	A
9	Carmel Valley Rd/Laureles Grade	Signal	13.1	B	15.0	B
10	Highway 68/Laureles Grade	Signal	26.1	C	67.4	E
	- Utilizing 'overlap' for NB RT, Modifying EB RT to a Shared TH/RT	Signal	21.9	C	18.5	B
Source TJKM Transportation Consultants, September 2003.						

Under the Cumulative Year 2025 conditions, the intersections of Carmel Valley Road/Carmel Rancho Boulevard/Carmel Knolls Drive and Carmel Valley Road/Rancho San Carlos Road are expected to continue to operate at acceptable levels of service. The intersections of Carmel Valley Road/Brookdale Drive/Project Driveway, Carmel Valley Road/Dorris Drive, and Carmel Valley Road/Laureles Grade are also expected to operate acceptably, with signalization. The following five intersections are expected to operate unacceptably under the Year 2025 scenario:

- Highway 1/Carpenter Street
- Highway 1/Ocean Avenue/Carmel Hills Drive
- Highway 1/Carmel Valley Road
- Highway 1/Rio Road
- Highway 68/Laureles Grade Road

In addition, at the request of the County, TJKM analyzed the cumulative plus project conditions along four roadway segments within the project area. Using information provided by the AMBAG, TJKM

projected the Year 2025 PM peak roadway volumes for four study area roadway segments along Carmel Valley Road as follows:

- Robinson Canyon Road – Schulte Road (1,990 vehicles per hour [vph])
- Schulte Road – Rancho San Carlos Road (2,170 vph)
- Rancho San Carlos Road – Carmel Rancho Boulevard (3,190 vph)
- Carmel Rancho Boulevard – Highway 1(3,080 vph)

The Highway Capacity Manual (2000) indicates that a two-lane rural highway such as Carmel Valley Road has a total capacity of 3,400 vph. Therefore, the study area roadway segments along Carmel Valley Road should be able to accommodate the cumulative plus project-related traffic in the area. However, the Carmel Valley Master Plan (as of 1995) lists three long-term passing lane improvements along Carmel Valley Road at the following locations:

- In front of September Ranch
- Opposite of Garland Ranch Regional Park, which is east of Robinson Canyon Road
- Near Laureles Grade Road, which is east of Garland Ranch Regional Park

Mitigation Measures

5-1: The applicant shall pay a fair share contribution towards improvements for Highway 1.

Monitoring Action

Prior to the issuance of occupancy permits, the applicant shall provide verification to the Monterey County Planning and Building Inspection Department that the fair share fee has been paid.

5-2: At the intersection of Highway 68/Laureles Road:

- Signal modification and widening of the intersection to utilize overlap phasing to have northbound right turn lanes on Laureles Grade Road go simultaneously with the westbound Highway 68 left-turns.
- Modify east bound Highway 68 approach to include one through lane and one shared though/right-tern lane.

All improvements for this intersection shall be consistent with the operational improvements identified for this intersection in the Highway 68 Action Plan.

Monitoring Action

Prior to the issuance of occupancy permits, the applicant shall provide verification to the Monterey County Planning and Building Inspection Department that the proper improvements have been completed at the intersection of Highway 68/Laureles Road.

Air Quality

The September Ranch Subdivision project, together with the other projects considered within the cumulative growth scenario, will result in an increase in air emissions within the project area through short-term emissions associated with construction activities and long-term emissions related to vehicle operation. The air quality assessment prepared for the proposed project, examined the project's consistency with the Air Quality Management Plan (AQMP). The AQMP incorporates population forecasts that are based on vacant land, General Plan land use designations, development potential, and the expected annual rates of growth. The air quality assessment determined that the September Ranch Subdivision project will result in an increase in population that is consistent with the AQMP between 2000 and 2020. Moreover, the cumulative projects considered within this analysis are those identified in the General Plan and the AQMP, which includes General Plan forecasts; thus, cumulative growth as identified in this cumulative analysis is consistent with the AQMP. Furthermore, emission reduction technology, strategies, and plans are constantly being developed. Adherence to Monterey Bay Air Pollution Control District (MBAPCD) rules and regulations would help to reduce potential significant cumulative air quality impacts to less than significant. Since, the proposed project and the associated cumulative development are accounted for in the planning projections of the AQMP and would be subject to the rules and regulations of the MBAPCD, the September Ranch project is considered to have a less than significant cumulative air quality impact.

Mitigation Measures

No mitigation measures are required.

Noise

Implementation of the proposed project, combined with cumulative development in the Planning Area, would increase ambient noise levels in the vicinity of the site. This increase would be due to vehicular traffic noise along local roadways. Therefore, primary noise sources would be long-term vehicle use of project residents and/or construction noise. Because cumulative development would occur at varying stages, noise generated by construction of the proposed project would not contribute cumulatively to the noise generated by other cumulative projects.

From the standpoint of long-term vehicle noise, if a road is already carrying enough traffic to experience elevated noise, a single project does not add enough traffic to cause an individually significant noise impact; thus, most offsite noise impacts are cumulative in nature. Cumulatively, several roadways will experience traffic noise level increases exceeding the 3.0 dB significance threshold. However, as shown in Table 5-2 below, the project contribution is undetectable.

Table 5-2: Cumulative Noise Contributions

Roadway Segment	CNEL*		Increase from:	
	Existing	Cum. (With Project)	Cum. Grow.	Project Only
SR-1				
Carmel Valley Rd.-Rio Rd.	70.2	73.3	+3.1	0.0
South of Rio Road	67.5	72.3	+4.8	0.0
Carmel Knolls Drive				
North of Carmel Valley Road	54.9	60.1	+5.2	0.0
Rancho San Carlos Rd.				
South of Carmel Valley Rd.	59.8	63.0	+3.2	0.0

* At 50 feet to centerline, residential standard is 65 dB CNEL.
Source: Giroux & Associates, October 2003.

Additionally, Table 5-3 shows the calculated noise levels at a 50-foot distance from the centerline of the twenty-seven roadway segments evaluated for this project.

Table 5-3: Off-Site Noise Impact Analysis

Segment	Existing CNEL	2025		
		Existing Plus Project	Cumulative No Project	Cumulative With Project
Serra Ave.				
West of SR-1	66.8	66.8	66.3	66.3
Carpenter St.				
East of SR-1	57.2	57.2	57.4	57.4
Ocean Ave.				
West of SR-1	66.0	66.1	68.0	68.0
Carmel Hills Dr.				
East of SR-1	62.0	62.1	63.6	63.6
Rio Road				
West of SR-1	66.3	66.3	67.1	67.1
East of SR-1	68.1	68.2	68.8	68.8
Carmel Valley Road				
SR-1-Carmel Knolls Dr.	72.9	73.0	73.8	73.9
East of Carmel Knolls	73.3	73.5	74.4	74.5
West of Rancho San Carlos	71.8	71.9	72.8	72.9
Rancho San Carlos-Canada Way	71.4	71.6	72.2	72.4
Canada Way-Brookdale Dr.	71.4	71.6	72.1	72.3

Table 5-3 (Cont.): Off-Site Noise Impact Analysis

Segment	Existing CNEL	2025		
		Existing Plus Project	Cumulative No Project	Cumulative With Project
East of Brookdale Dr.	71.4	71.5	72.1	72.2
West of Dorris Dr.	70.5	70.6	71.4	71.4
East of Dorris Dr.	69.6	69.7	70.5	70.6
West of Laureles Grade	68.8	68.8	69.8	69.9
East of Laureles Grade	68.6	68.7	69.9	69.9
SR-1				
North of Carpenter St.	76.2	76.2	77.4	77.4
Carpenter-Carmel Hills Dr.	74.9	74.9	76.4	76.4
Carmel Hills Dr.-Carmel Valley Rd.	74.6	74.7	75.9	75.9
Carmel Valley Rd.-Rio Rd.	70.2	70.2	73.3	73.3
South of Rio Rd.	67.5	67.6	72.3	72.3
Carmel Knolls Dr.				
North of Carmel Valley Rd.	54.9	54.9	60.1	60.1
Carmel Rancho Blvd.				
South of Carmel Valley Rd.	68.0	68.0	68.7	68.8
Rancho San Carlos				
South of Carmel Valley Rd.	59.8	59.8	63.0	63.0
Brookdale Dr.				
South of Carmel Valley Rd.	48.0	48.0	48.0	48.0
Dorris Dr.				
South of Carmel Valley Rd.	61.9	62.0	62.4	62.5
Laureles Grade				
North of Carmel Valley Rd.	62.3	62.5	64.8	64.9

* At 50 feet from each roadway centerline.
Source: Giroux & Associates, October 2003.

As identified on Table 5-3, the entire cumulative noise increase will be from non-project growth; therefore, the project's noise-related cumulative impacts are considered to be less than significant. Moreover, since the evaluation of noise impacts is typically determined on a project-by-project basis in order to focus mitigation on a particular noise source, future development proposals within the County would require separate discretionary approvals and CEQA assessments. Additionally, the mitigation measures outlined in Section 4.8, Noise, of this Draft REIR are sufficient to mitigate any cumulative noise impacts that may affect future September Ranch Subdivision residents, specifically residents of the inclusionary housing component of the project.

Biological Resources

The Carmel Valley corridor is largely open space and rural lands with pockets of residential and commercial development. The terrain varies from riparian along the Carmel River and drainages to level chaparral vegetation. Several stream corridors and drainage channels are also located within the corridor. All of these resources provide habitat for wildlife. Golden eagles as well as other birds of prey are known to utilize the valley for hunting and nesting. The introduction and/or expansion of residential and commercial growth within the project area will result in a cumulative reduction in wildlife habitat and native vegetation. In addition, wildlife mobility throughout Carmel Valley and adjacent open space lands could be affected unless corridors are provided to connect established open space lands. State law (e.g., CEQA) requires that development proposals be evaluated by the County for site-specific impacts and appropriate mitigation measures employed to reduce these impacts to the maximum extent feasible. The September Ranch project will result in retaining approximately 729 of the 891-acre site as open space, including lands contingent with the Jack Peak County Park.

Development of the September Ranch project in conjunction with other cumulative projects will result in impacts to the Monterey pine forest and the coast live oak forest. The project's Forest Management Plan includes mitigation, which requires that lost acreage of Monterey pines and coast live oak be replaced at a ratio of 3 acres for every 1 acre lost. In addition, lost trees are to be replaced at a 1:1 ratio. Because of these measures, the proposed project would not contribute to a net loss of Monterey pines or coast live oak forests.

Water usage at the project site will at times result in reducing flows to the Carmel River by 57.21 AFY. Currently water use at the project site is 99 AFY (see Section 4.3 Water Supply and Availability of this REIR and Appendix C of this REIR). Of concern, is that reduced flows may adversely affect steelhead and red legged frog populations. As discussed in Section 4.9, Biological Resources, of this REIR, the National Marine Fisheries Service (NMFS) technical report, prepared in 2002, *Instream Flow Needs for the Steelhead in the Carmel River,* identified that there is greater than 10,000 AF of water available for flow during average water years and there is less than 1,000 AF during dry years, which represent approximately twenty percent of the years. Since the planned development patterns within the project area do not indicate that there will be large withdrawals from the river (see Section 4.1 Land Use and Planning) and since there is a surplus of 10,000 AF in average to above average water years and approximately 1,000 AF in drought years, the project's 57.21 AF reduction is not considered cumulatively significant.

The project's retention of open space, mitigation of individual impacts to a less than significant level, and the fact that cumulative development will be subject to environmental review pursuant to CEQA, no significant cumulative biological resources impact would occur from implementation of the September Ranch Subdivision project.

Mitigation Measures

No mitigation measures are required

Cultural Resources

There are no known cultural resources within the project area. However, there is the potential for unknown cultural resources to be discovered during earth moving activities. The recommended

mitigation measure identified in Section 4.10, Cultural Resources, of this Draft REIR, reduces any potential impacts to unknown cultural resources to less than significant. It is unlikely that the proposed project will contribute to a cumulative impact upon cultural resources either through the reduction and/or disturbance of such resources, since the site is not considered to have any cultural resources. Additionally, the cultural sensitivity of land where cumulative development is considered will be evaluated during those projects approval processes. As this impact would be considered a site specific impact, the September Ranch Subdivision project is considered to have a less than significant cumulative cultural resources impact.

Mitigation Measures

No mitigation measures are required.

Aesthetics

The September Ranch Subdivision project, in conjunction with other cumulative projects, will result in altering the visual characteristics within the Planning Area. However, as with the proposed project, in accordance with the CVMP, the location of final building envelopes for cumulative development are expected to be sited so as to minimize potential viewshed impacts. More specifically, in the case of the September Ranch Subdivision project, siting of these lots were established by taking into consideration both topography and elevations in relation to public vantage points and transportation routes. Based on the current location of proposed lots and the clustering of the inclusionary housing, the project will not result in the development of home sites along the ridgelines, and will not obstruct views of the surrounding mountains, Carmel River, or other sensitive public viewsheds. Moreover, the project's internal circulation system has been designed to minimize the amount of cut and fill slopes that would be visible from areas within and viewpoints surrounding the project site. Moreover, the level of visual alteration in the Planning Area will be regulated by the CVMP lot allocation system. Therefore, visual impacts will be limited and the September Ranch project will not contribute to a cumulative alteration in the overall rural, open space characteristics of the project area. Light and glare will incrementally increase as development intensifies within the Planning Area; however, development in the immediate project area will primarily be guided by the CVMP lot allocation system; thus, any changes in light and glare will be gradual. As the September Ranch Subdivision project will not result in significant aesthetic impacts and other related cumulative projects are subject to the applicable policies of the CVMP, no significant cumulative aesthetic impacts would occur.

Mitigation Measures

No mitigation measures are required.

Population, Housing, and Employment

The proposed project will introduce 109 new residential units and approximately 350 new residents into the project area. As with other residential projects considered within the context of this cumulative analysis, the September Ranch Subdivision project is subject to the CVMP's lot allocation system, which establishes the maximum number of lots that may be created on an annual basis within the Carmel Valley Planning Area. Additionally, the CVMP established a 20-year total of 1,310 existing and newly created lots that include 572 existing lots of record as of December 9, 1986, and

738 new lots to be created subject to an allocation and subdivision evaluation system. The average annual rate of allocation is limited to 37 lots (738 lots/20 years). Subdivisions may be approved for up to the maximum number of lots for the life of the tentative map. However, as a general policy, no more than 25 lots per year may be created in any one subdivision. Therefore, since the proposed project will be developed in accordance with the required CVMP lot allocation system, significant cumulative population, housing, and employment impacts would not occur.

Mitigation Measures

No mitigation measures are required.

Public Services and Utilities

Fire Services

As identified in the Carmel Valley Fire District's (CVFD) Capital Improvement Plan, currently, there is a need to expand the Mid Valley Fire station to accommodate administrative and on-duty staff as well as fire apparatus. The September Ranch project will exacerbate the need for additional space. With the project's payment of annexation fees, the CVFD will be able to adequately service the proposed project. Cumulative projects will be required to institute similar measures; specifically, cumulative projects will be required to participate in a fee program to provide fair share payments for provision of fire protection facilities and the equipment required to serve such development. Therefore, the September Ranch Subdivision project will have a less than significant cumulative fire protection service impact.

Police Services

The proposed project, in conjunction with other related cumulative projects, will result in development intensification within and surrounding the project area. Cumulatively, these projects will create a demand for police services. Generally, traffic related accidents and theft/burglary tends to increase as populations increase. However, the County assesses fees to offset the service costs associated with new development. Therefore, project implementation will result in less than significant cumulative police services impacts.

School Services

Many of the schools within the project area are at or near capacity. Overall, growth within the Planning Area will contribute to an increasing demand for school services. As with the proposed project, cumulative projects will be in compliance with Government Code Section 65966, as required by law, which will require the project applicant to pay the state mandated fee presumptive payment. The payment of school impact fees will reduce cumulative school impacts to a level that is considered less than significant.

Solid Waste

Solid waste generation will increase incrementally with development in the Planning Area. However, as with the proposed project, cumulative development will have to comply with regulations, such as AB 939, regarding waste reduction and recycling during both construction and operational phases. Moreover, landfill and recycling facilities serving the project site and cumulative development in the

Planning Area are anticipated to operate until the year 2092. The remaining landfill capacity is 22,600,000 tons. Therefore, there is sufficient capacity to serve the project and cumulative development. In addition, although solid waste generation may incrementally increase, adherence to regulations, as required by State law and local ordinances, will provide increasing opportunity to divert and recycle refuse; therefore, the September Ranch Subdivision project would result in a less than significant cumulative solid waste impact.

Recreational Services

According to the County of Monterey Subdivision Code (Section 19.12.010), the County requires 3 acres of recreational land per 1,000 persons. Currently, the County maintains and operates 19,400 acres of land and water for public recreational use. The County's requirement, based on the population size of Monterey County, is 1,198 acres of land for recreational use. Implementation of the September Ranch Subdivision project will result in approximately 793 acres of the 891-acre project site being retained for open space and recreational uses. According to the County standard, this is 792 acres more than the project is required to provide. Moreover, as identified in Section 4.10, Public Services and Utilities, the project will incorporate a mitigation measure requiring the applicant to dedicate trail easements. Thus, the project will not contribute to any cumulative adverse impact upon recreational services.

Energy Resources

Development of future projects within the cumulative impact area will require the extension of, and connections to, existing electrical and natural gas transmission and distribution systems. The existing facilities, which are owned, operated, and maintained by PG&E are currently capable of serving the project area or are capable of being expanded to serve future development. All expansion of electrical and natural gas services will be in accordance with CCR Title 24, the County's General Plan, and other energy conservation policies, which will reduce cumulative energy resources impacts to a level that is considered less than significant.

Mitigation Measures

No mitigation measures are required.

5.1.2 Conclusion

The September Ranch Subdivision project is not anticipated to contribute to significant unavoidable cumulative impacts that cannot be feasibly mitigated to levels that are considered less than significant.

SECTION 6
ALTERNATIVES TO THE PROPOSED PROJECT

Section 15126.6 of the State CEQA Guidelines, as amended, mandates that an EIR include a comparative evaluation of the proposed September Ranch Subdivision project with the alternatives to the project, including a No Project Alternative. This section focuses on alternatives, as identified in Section 15126(d)(2) of the State CEQA Guidelines, to the September Ranch Subdivision project that are capable of avoiding or substantially lessening any significant adverse impacts associated with the proposed project—even if these alternatives would to some degree impede attainment of project objectives or be more costly. The alternatives may result in new impacts that would not result from the proposed project. CEQA requires that this analysis explain why the alternatives and related mitigation measures would not be preferable to the proposed project.

Case law suggests that discussion of alternatives need not be exhaustive, and that alternatives be subject to reasonable construction. CEQA Guidelines Section 15126(d)(3) states that impacts of the alternatives may be discussed "in less detail than the significant effects of the project as proposed."

The 1998 FEIR discussed four alternatives: the No Project Alternative; Buildout Under the General Plan Alternative[1]; Clustered Site Plan (Reduced Density Alternative); and an Additional Reduced Density (without the Planned Unit Development) Alternative. Similar to the 1998 FEIR, this Draft REIR evaluates four alternatives:

- No Project/No Development Alternative
- Reduced Density - Planning Commission Recommendation Alternative
- Reduced Forest Impact with High Inclusionary Housing Alternative
- Reduced Forest Impact with Twenty Percent Inclusionary Housing Alternative

While the alternatives in this Draft REIR are refined to be consistent with the CEQA Guidelines that alternatives not only be feasible but also reduce one or more significant impacts, the foundation of these alternatives is derived from the alternatives examined in the 1998 FEIR. Specifically, as required by CEQA, both documents examined a No Project Alternative, and both documents examined different variations of reduced density scenarios as well as development scenarios that considered a reduction in lot sizes in an effort to reduce biological resources impacts.

As in the 1998 FEIR, an Environmentally Superior Alternative will be selected from among the four alternatives evaluated in this Draft REIR. An alternative that is environmentally superior will result in the fewest or least significant environmental impacts and will achieve the project objectives of the planning effort.

As stated in Section 3, Project Description, of this Draft REIR, the project objective is to provide market rate and low- and moderate-income housing in accordance with the existing County ordinances and the Carmel Valley Master Plan (CVMP).

[1] To be consistent with CEQA's guidelines for evaluating alternatives, this alternative assumed only 117 of the allowable 208 units would be developed and that the lot sizes would be reduced.

The analysis of the alternatives assumes that all applicable mitigation measures associated with the project will be implemented with the appropriate alternatives. However, applicable mitigation measures may be scaled to reduce or avoid a potential impact of the alternative under consideration and may not precisely match those identified for the September Ranch Subdivision project. While specific phasing of the plan alternatives has not been developed, with the exception of the No Project/No Development Alternative, all the alternatives would be similarly phased. As with the proposed project, the phasing concept for the alternatives is to develop the property up to four units at a time, developing the southeast portion of the project first, followed by the northeast, southwest, and northwest. Moreover, as with the September Ranch Subdivision project all of the alternatives would result in development of slopes equal to or less than 30 percent, with the exception of the No Project/No Development Alternative. However, no alternative would result in creation of additional slopes beyond those identified for the proposed project.

6.1 No Project/No Development Alternative

Under the No Project/No Development Alternative (No Project Alternative), the entire project site would remain unchanged and no new development would occur onsite. In general, the September Ranch Subdivision project area would continue to exist as open space and equestrian center use.

6.1.1 Impact Evaluation

Land Use and Planning

The No Project Alternative is consistent with the policies of the CVMP and other related planning programs. As identified in Section 4.1, Land Use and Planning, of this Draft REIR, no significant land use incompatibility and related planning or policy impacts are anticipated to occur with implementation of the proposed September Ranch Subdivision project. Continuation of these existing onsite uses, under this alternative, would not result in any land use and planning impacts. Therefore, this alternative would result in less land use and planning impacts in comparison to the September Ranch Subdivision project.

Geology and Soils

The project site is subject to earthquakes and seismic ground shaking. In addition, the project site may be subject to secondary seismic effects, such as landslides. The No Project Alternative would not result in the development of new structures within a seismically active area, which is susceptible to secondary seismic effects. Therefore, no impacts would occur under this alternative. As identified in Section 4.2, Geology and Soils, of this Draft REIR, with incorporation of the recommended mitigation measures, the September Ranch Subdivision project is considered to have less than significant geology and soil impacts. However, since the No Project Alternative would not result in the development of any new buildings and therefore, have fewer residents located within a seismic hazard area, this alternative is considered to have less geology and soil impacts in relation to the September Ranch Subdivision project.

Water Supply and Availability

Under the No Project Alternative, water usage at the site would continue 110 acre-feet per year (AFY). The proposed project would result in a usage of 57.21 AFY. As noted in Section 4.3, Water

Supply and Availability of this Draft REIR, the September Ranch Subdivision project will not result in a water demand that will exceed the availability of the September Ranch Aquifer (SRA) or impact other users of the SRA or result in a demand that will impact the Carmel Valley Aquifer (CVA). Since under current conditions, there is a usage of 99 AFY at the project site, the No Project Alternative results in a greater demand for water supply. Therefore, this alternative is considered to have greater water supply and availability impacts in relation to the September Ranch Subdivision project.

Hydrology and Water Quality

In the short-term, the No Project Alternative would not result in earth moving activities that may result in increased erosion and sedimentation or accidental spills or releases of construction-related materials. In the long-term, the No Project Alternative would also not result in an increase in impervious surfaces and stormwater runoff and velocities in the project area. As identified in Section 4.4, Hydrology and Water Quality, of this Draft REIR, the hydrology and water quality impacts of the September Ranch Subdivision project will be mitigated to levels considered less than significant. However, since the No Project Alternative would not result in altering the drainage and water quality characteristics of the site, this alternative is considered to have less hydrology and water quality impacts in relation to the proposed project.

Wastewater Treatment and Disposal

The September Ranch Subdivision project will result in an increased generation of wastewater at the project site. Project implementation will result in construction and operation of an onsite wastewater treatment plant (WTP) or alternatively, in the event that the project does not include the construction and operation of an onsite WTP, wastewater flows generated by the project will have to be handled by the Carmel Area Wastewater District (CAWD). As stated in Section 4.5, Wastewater Treatment and Disposal, of this Draft REIR, connection of the project to the CAWD system is the preferred alternative. Under either scenario, the project will result in releasing nitrates into the soil and groundwater through spray disposal. As identified in Section 4.5, Wastewater Treatment and Disposal, of this Draft REIR, with incorporation of mitigation measures, the September Ranch Subdivision project will have less than significant wastewater treatment and disposal impacts. Moreover, if the project connects with the CAWD system, there is the opportunity for environmental benefits through the release of tertiary treated water to augment freshwater flows in the Carmel Valley Lagoon. However, the No Project Alternative would not result in spray disposal and, thus, it would not result in releasing nitrates into the soil. Therefore, the No Project Alternative is considered to have less wastewater treatment and disposal impacts in relation to the proposed project.

Transportation and Circulation

The No Project Alternative would not contribute to generation of any additional traffic within the proposed project area or result in construction-related vehicle trips. As identified in Section 4.6, Transportation and Circulation, of this Draft REIR, the September Ranch Subdivision project will not result in any significant traffic impacts, with the incorporation of the recommended mitigation measures. However, since the No Project Alternative would not result in any additional traffic generation, this alternative is considered to have less transportation and circulation impacts in relation to the September Ranch Subdivision project.

Air Quality

No new short-term construction or long-term operational air quality emissions would occur as a result of the No Project Alternative. As identified in Section 4.7, Air Quality, of this Draft REIR, the September Ranch Subdivision project is not considered to result in any significant air quality impacts with the implementation of the recommended mitigation measures. However, since this alternative would not result in development that would create increased air emissions, the No Project Alternative is considered to have less air quality impacts in relation to the proposed project.

Noise

The No Project Alternative would not result in any of the short-term construction or long-term operational phase noise impacts associated with the September Ranch Subdivision project. As identified in Section 4.8, Noise, of this Draft REIR, the September Ranch Subdivision project's noise impacts can be mitigated to a level considered less than significant. However, since this alternative would not result in development that would create increased traffic-related or other noise sources, the No Project Alternative is considered to have less noise impacts in relation to the proposed project.

Biological Resources

Unlike the proposed project, the No Project Alternative would not result in impacting 71.37 acres of Monterey pine/live coast oak forest, coast scrub, or grassland. As identified in Section 4.9, Biological Resources, of this Draft REIR, the September Ranch Subdivision project's biological resources impacts can be mitigated to less than significant. Additionally, the proposed project will retain approximately 793 acres as open space. However, since this alternative would result in no impacts to biological resources, the No Project Alternative is considered to have less biological resources impacts in relation to the proposed project.

Cultural Resources

There are no known cultural resources located within the project site. However, project implementation will involve earth moving activities, during which unknown cultural resources may be uncovered and disturbed. As identified in Section 4.10, Cultural Resources, of this Draft REIR, the September Ranch Subdivision project's potential cultural resources impacts can be mitigated to levels considered less than significant. However, the No Project Alternative would result in no earth moving activities and therefore, this alternative is considered to have less cultural resources impacts in relation to the September Ranch Subdivision project.

Aesthetics

Implementation of the No Project Alternative would result in no new development. Therefore, no alteration of the existing visual and aesthetic character of the site or project area would occur. The project site would continue to support open space and equestrian facility land uses under the No Project Alternative. As identified in Section 4.11, Aesthetics, of this Draft REIR, the September Ranch Subdivision project is not considered to have significant aesthetic impacts. However, as implementation of the proposed project is not considered to result in significant aesthetic impacts, it will result in alteration of views, and introduce new sources of light and glare into the project area.

Source: Shaw Architecture Planning, Inc., February 2004.

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Exhibit 6-1
Planning Commission Recommendation Alternative Map

Therefore, the No Project Alternative is considered to have less aesthetic impacts in relation to the September Ranch Subdivision project.

Population, Housing, and Employment

The proposed project will result in the construction of 94 market rate units and 15 units of inclusionary housing. Project implementation will be in accordance with the CVMP's lot allocation system. As identified in Section 4.12, Population, Housing and Employment, of this Draft REIR, the September Ranch Subdivision project will not result in any significant population, housing, and employment impacts. Under the No Project Alternative, no development would occur, which would result in an even greater shortage of suitable housing for low- to moderate-income persons, since this alternative would not result in the construction of the 15 inclusionary housing units. Moreover, this alternative would not provide short-term employment during construction activities. Therefore, the September Ranch Subdivision project is considered to have less population, housing, and employment impacts in relation to the No Project Alternative.

Public Services and Utilities

The No Project Alternative would not require the extension and/or upgrades of utilities to the site. Moreover, the No Project Alternative would not result in generating a greater demand for public services and utilities. As noted in Section 4.13, Public Services and Utilities, of this Draft REIR, with implementation of mitigation measures, the September Ranch Subdivision project is considered to have less than significant public services and utilities impacts. However, the No Project Alternative would not result in an increase in demand for these utilities or services. Therefore, the No Project Alternative is considered to have less public services and utilities impacts in relation to the September Ranch Subdivision project.

6.1.2 Conclusions

The No Project Alternative would result in fewer land use and planning, geology and soils, water supply and availability, hydrology and water quality, wastewater treatment and disposal, transportation and circulation, air quality, noise, biological resources, cultural resources, aesthetics, and public services and utility impacts when compared to the September Ranch Subdivision project. However, this alternative would have greater population, housing, and employment impacts. Under the No Project Alternative, the site would remain in its present state primarily supporting open space with limited use for livestock grazing and open trail riding. The equestrian center facility would also remain under this alternative. This alternative would not meet the project's objective of providing market rate and low- and moderate-income housing.

6.2 Reduced Density - Planning Commission Recommendation Alternative

As part of the previous approval process for the 1998 Final EIR, the Monterey County Planning Commission recommended a reduced density alternative for the September Ranch Subdivision project. This Reduced Density - Planning Commission Recommendation Alternative (Planning Commission Recommendation Alternative) identified the development of 49 market rate lots and 8 inclusionary lots, for a total of 57 units distributed over 36.01 acres (see Exhibit 6-1). Under this Alternative, the equestrian facilities would remain on the 20.2-acre lot, on which it is currently

located. This alternative would result in a reduction of 8,000 cubic yards of grading, for a total of 92,000 cubic yards of grading in comparison to the 100,000 cubic yards of grading proposed under the project.

6.2.1 Impact Analysis

Land Use and Planning

Similar to the September Ranch Subdivision project, implementation of the Planning Commission Recommendation Alternative would result in intensification of land uses on the project site itself and within the project area. Like the proposed project, this alternative would be subject to the allocation and subdivision evaluation system and the County's Inclusionary Housing Ordinance. The reduction in development intensity assumed for this alternative would result in relatively the same land use compatibility impacts to onsite and surrounding land uses, but on a slightly lesser scale. Additionally, the reduction in development intensity would lead to the same conclusions with respect to consistency with the County's General Plan and other related planning programs, including the County's Inclusionary Housing Ordinance. Overall, this alternative would result in similar land use and planning impacts as that of the September Ranch Subdivision project.

Geology and Soils

The project site is subject to earthquakes and seismic ground shaking. In addition, the project site may be subject to secondary seismic effects, such as landslides. In comparison to the September Ranch Subdivision project, the Planning Commission Recommendation Alternative would result in decreasing development in a seismically active area, which is susceptible to secondary seismic effects. As with the proposed project, this alternative would be subject to the Uniform Building Code (UBC). As identified in Section 4.2, Geology and Soils, of this Draft REIR, with incorporation of the recommended mitigation measures, the proposed project is considered to have less than significant geology and soil impacts. However, since the Planning Commission Recommendation Alternative results in less residential structures and, thus, fewer residents located within a seismic hazard area, this alternative is considered to have less geology and soil impacts in relation to the proposed project.

Water Supply and Availability

The September Ranch Subdivision project is projected to utilize 57.21 AFY of water. The Planning Commission Alternative would result in an incremental decrease in water usage proportionate to the decrease in development associated with this alternative. As identified in Section 4.3, Water Supply and Availability, of this Draft REIR, there is sufficient water supply to serve the proposed project without affecting the availability of water to other users within the SRA system or impacting the CVA. However, since the Planning Commission Alternative would result in less water demand, this alternative is considered to have less water supply and availability impacts in relation to the proposed project.

Hydrology and Water Quality

The Planning Commission Recommendation Alternative would result in an incremental decrease in hydrology and water quality impacts. More specifically, in the short-term construction and long-term operation, this alternative will require less earth moving activities; thereby, resulting in less erosion

and less impervious surfaces reducing the amount of stormwater runoff and velocities in the project area, respectively. However, as with the September Ranch Subdivision project, this alternative would still be required to implement the mitigation measures identified in Section 4.4, Hydrology and Water Quality, of this Draft REIR, to reduce hydrology and water quality impacts to less than significant levels. Since the Planning Commission Recommendation Alternative would result in and incrementally decrease short-term construction-related activities and onsite impervious surfaces, this alternative is considered to have less hydrology and water quality impacts in relation to the September Ranch Subdivision project.

Wastewater Treatment and Disposal

Similar to the September Ranch Subdivision project, the Planning Commission Recommendation Alternative will include the construction and operation of an onsite wastewater treatment plant (WTP) or, alternatively, in the event that the project does not include the construction and operation of an onsite WTP, wastewater flows generated by the project will be handled by the Carmel Area Wastewater District (CAWD). In comparison to the September Ranch project, the Planning Commission Recommendation Alternative would result in an incremental decrease in generation of wastewater proportionate to the decrease in development. As identified in Section 4.5, Wastewater Treatment and Disposal, of this Draft REIR, all project-related wastewater treatment and disposal impacts will be reduced to levels considered less than significant. However, since the Planning Commission Recommendation Alternative will result in generating less wastewater, this alternative is considered to have less wastewater and treatment impacts in relation to the September Ranch Subdivision project.

Transportation and Circulation

Presently, four intersections within the project area operate an unacceptable LOS: Highway 1/Ocean Avenue/Carmel Hills Drive; Carmel Valley Road/Brookdale Drive; Carmel Valley Road/Dorris Drive; and Carmel Valley Road/Laureles Grade Road. The September Ranch project is anticipated to result in approximately 1,053 daily vehicle trips, 83 of which will occur during the AM peak hour and 111 of which will occur during the PM peak hour. Vehicle trips will be reduced incrementally with the decrease in residential units under this alternative. However, this alternative would result in the same sight distance impacts at the four-legged intersection of the project access road, September Ranch Road and Carmel Valley Road at Brookdale Drive. Since the Planning Commission Recommendation Alternative would result in adding less vehicle trips to project area roadways, this alternative is considered to have less transportation and circulation impacts in relation to the September Ranch Subdivision project.

Air Quality

Air quality impacts are primarily a result of vehicle emissions. Therefore, these impacts occur during short-term construction activities and long-term operation of the project. In the short-term, construction activities, such as earthmoving, excavation and grading operations, construction vehicle traffic, and wind blowing over exposed earth will generate exhaust emissions and fugitive particulate matter that will affect air quality. The Planning Commission Recommendation Alternative would have similar short-term air quality impacts as the September Ranch Subdivision project and, therefore, would be subject to the mitigation measures outlined in Section 4.7, Air Quality, of this Draft REIR. Similar to the proposed project, implementation of these mitigation measures would

reduce short-term air quality impacts to less than significant levels. In the long-term, this alternative would result in a reduction in vehicle trips resulting in a reduction in air quality emissions. Similar to the September Ranch Subdivision project, this alternative would not result in significant long-term air quality impacts. Although the air quality impacts associated with the proposed project can be mitigated to less than significant levels, the Planning Commission Recommendation Alternative would result in fewer vehicle trips and therefore it is considered to have less air quality impacts in relation to the September Ranch Subdivision project.

Noise

Similar to air quality impacts, noise impacts are primarily associated with vehicle trips and occur in both the short-term and the long-term. Short-term noise impacts are associated with earthmoving activities and construction equipment. The Planning Commission Recommendation Alternative would result in similar short-term noise impacts as the September Ranch Subdivision project and would be subject to mitigation measures outlined in Section 4.8, Noise, of this Draft REIR. These measures would reduce short-term noise impacts to less than significant levels. As previously discussed, the Planning Commission Recommendation Alternative would result in generating less long-term vehicle trips than the proposed project. However, similar to the September Ranch Subdivision project, it is likely that, under the Planning Commission Recommendation Alternative, the inclusionary housing units would experience residential noise impacts associated with traffic along Carmel Valley Road. Implementation of the mitigation measures, as outlined in Section 4.8, Noise, of this Draft REIR, would reduce these impacts less than significant levels. Overall, all project-related noise impacts would be mitigated to less than significant levels. However, since the Planning Commission Recommendation Alternative would result in fewer vehicle trips and fewer sources of noise generation, this alternative is considered to have less noise impacts in relation to the proposed project.

Biological Resources

The proposed project will result in impacting 71.37 acres of Monterey pine/coast live oak forest, coastal scrub, and grassland. The Planning Commission Recommendation Alternative would result in an incremental decrease in the amount of acreage impacted in relation to the reduction in development. In January 2004, Staub Forester and Environmental Consultant reviewed the development plan for the Planning Commission Recommendation Alternative and determined that 1,145 Monterey pines and 502 coast live oak will be removed as a result of this alternative. Conversely, it is anticipated that the September Ranch Subdivision project will result in the removal of 2,692 Monterey pines and 890 coast live oak. As identified in Section 4.9, Biological Resources, of this Draft REIR, the proposed project will mitigate on a 1:1 basis for the loss of trees. However, since this alternative would result in removing fewer trees and impacting less acreage resulting in less disturbance to plants and wildlife, it is considered to have less biological resources impacts in relation to the proposed project.

Cultural Resources

There are no known cultural resources located on the project site. However, project implementation will involve earth moving activities, during which previously undiscovered cultural resources may be uncovered and disturbed. As identified in Section 4.10, Cultural Resources, of this Draft REIR, the September Ranch project's potential cultural resources impacts can be mitigated to levels that are

considered less than significant. However, the Planning Commission Recommendation Alternative would result in a reduction in earth moving activities since it will result in less development; therefore, this alternative is considered to have less cultural resources impacts in relation to the proposed project.

Aesthetics

The Planning Commission Recommendation Alternative will have similar aesthetic impacts as those described in Section 4.11, Aesthetics, of this Draft REIR. As noted in Section 4.11, the prominent visual alteration will be the visibility of inclusionary housing units from Carmel Valley Road. Under this alternative, there will be fewer inclusionary housing units; thus, there will be a reduction in visual effects in comparison to the proposed project. However, like the September Ranch Subdivision project, lots under this alternative have been sited to minimize potential viewshed impacts. More specifically, siting of these lots took into consideration both topography and elevations in relation to public vantage points and transportation routes. As with the proposed project, the location of the proposed lots and the clustering of the inclusionary housing, under this alternative, will not result in the development of home sites along the ridgelines, and will not obstruct views of the surrounding mountains, the Carmel River, or other sensitive public viewsheds. Additionally, similar to the September Ranch Subdivision project, the Planning Commission Recommendation Alternative's internal circulation system has been designed to minimize the amount of cut and fill slopes that would be visible from areas within and viewpoints surrounding the project site. The Planning Commission Recommendation Alternative would also result in an incremental decrease in the amount of light intrusion proportionate to the reduction in residential units. Overall, this alternative is considered to have less aesthetic impacts in relation to the proposed project.

Population, Housing, and Employment

The Planning Commission Recommendation Alternative would result in introducing 181 people and 57 residential units into the project area. Conversely, the proposed project will result in introducing 350 people and 109 residential units into the project area. Along with the reduction in overall housing units proposed under the Planning Commission Recommendation Alternative, it should be noted that this alternative would also result in a reduction of inclusionary housing units in comparison to the proposed project. Both the Planning Commission Recommendation and the September Ranch Subdivision project are within the parameters of AMBAG's population forecasts for the project area. As with the proposed project, the Planning Commission Recommendation Alternative would be subject to the CVMP lot allocation system. The average annual rate of allocation within the CVMP area will be limited to 37 lots; however, subdivisions may be approved for up to the maximum number of lots for the life of the tentative map. As with the September Ranch Subdivision project, the inclusionary housing units are exempt from the annual allocation system. As noted in Section 4.12, Population, Housing, and Employment, of the Draft REIR, the proposed project will not have a significant impact upon population, housing, and employment. However, since the proposed project will result in construction of a greater number of inclusionary housing units and would create more short-term construction employment opportunities, the Planning Commission Recommendation Alternative is considered to have greater population, housing, and employment impacts.

Public Services and Utilities

Similar to the September Ranch Subdivision project, implementation of the Planning Commission Recommendation Alternative would require upgrades and extensions of existing facilities and services. However, implementation of this alternative would result in a decrease in the demand for some public services and utilities, such as sheriff and fire services, solid waste, educational, etc., since it will reduce the number of residential units developed onsite. Similar to the proposed project, the Planning Commission Recommendation Alternative would be required to implement the mitigation measures identified in Section 4.13, Public Services and Utilities, of this Draft REIR to reduce the alternative's impacts to less than significant. Since the Planning Commission Recommendation Alternative will result in less development, it is considered to have less public service and utilities impacts than the proposed project.

6.2.2 Conclusions

The Planning Commission Recommendation Alternative would result in an incremental decrease in impacts in relation to geology and soils, water supply and availability, hydrology and water quality, wastewater treatment and disposal, transportation and circulation, air quality, noise, biological resources, cultural resources, aesthetics, and public services and utilities. Additionally, this alternative would result in similar land use and planning impacts but greater population, housing and employment impacts. This alternative would not fully meet the project's objective of providing market rate and low- to moderate-income housing.

6.3 Reduced Forest Impact With High Inclusionary Housing Alternative

This alternative would result in the development of 72 market rate lots and 22 inclusionary units, for a total of 94 units on approximately 46 acres (see Exhibit 6-2). In comparison to the September Ranch Subdivision project's 100,000 cubic yards of grading, the Reduced Forest Impact with High Inclusionary Housing Alternative (Reduced Forest Impact Alternative) would result in 3,000 less cubic yards of earthwork. The amount of open space would be incrementally increased proportionate to the reduction in development that is proposed under this alternative. Similar to the September Ranch project, this alternative would result in clustering of the inclusionary housing units. Under the Reduced Forest Impact Alternative, a total of 2,227 trees (1,459 pine trees and 768 oak trees) would be removed, in comparison to the 3,582 trees proposed to be removed in association with the proposed project.

6.3.1 Impact Analysis

Land Use and Planning

This alternative would result in a reduction of 22 market rate residential units and an increase of 7 inclusionary housing units, with an overall decrease of 15 residential units. Although a reduction in development intensity is assumed under the Reduced Forest Impact Alternative, this alternative would result in similar land use compatibility impacts to onsite and surrounding land uses, but on a slightly lesser scale. Moreover, due to the similar nature of development, implementation of this alternative would result in the same conclusions with respect to consistency with the County's General Plan and other related planning programs, including the County's Inclusionary Housing Ordinance. Therefore,

Source: Shaw Architecture Planning, Inc., February 2004.

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Exhibit 6-2
Reduced Forest Impact with High Inclusionary Alternative Map

this alternative would result in similar land uses and planning impacts as that of the September Ranch Subdivision project.

Geology and Soils

As with the proposed project, the Reduced Forest Impact Alternative would be required to adhere to the provisions of the UBC. The geology and soil impacts associated with the implementation of the Reduced Forest Impact Alternative would be incrementally decreased, proportional to the reduction in land disturbance and number of habitable onsite structures. This decrease would result in fewer residents located in seismic hazard areas that are subject to strong ground shaking and other secondary seismic effects. Geology and soils impacts associated with the September Ranch Subdivision project can be mitigated to a level considered less than significant. However, due to the Reduced Forest Impact Alternative's decrease in onsite development, this alternative is considered to have less geology and soils impacts in relation to the proposed project.

Water Supply and Availability

Due to the overall proposed reduction of 15 units, the Reduced Forest Impact Alternative would result in a decrease in water demand when compared to the September Ranch Subdivision project. As identified in Section 4.3, Water Supply and Availability, of this Draft REIR, the proposed project will have an adequate supply of water and project implementation will not result in adversely affecting the availability of supply within the SRA system or impact the CVA. The mitigation measures identified in Section 4.3 of this Draft REIR would also be required for this alternative. However, since the Reduced Forest Impact Alternative would result in a decrease in water demand, this alternative is considered to have less water supply and availability impacts in relation to the proposed project.

Hydrology and Water Quality

In comparison to the September Ranch Subdivision project, the Reduced Forest Impact Alternative would result in a reduction of 3,000 cubic yards of grading during construction activities; thereby reducing erosion and sedimentation. The decrease in overall development intensity under this alternative would reduce the amount of impervious surfaces onsite and the amount of stormwater runoff in the project area. As with the proposed project, the Reduced Forest Impact Alternative would be required to implement the mitigation measures identified in Section 4.4, Hydrology and Water Quality, of this Draft REIR. However, since the Reduced Forest Impact Alternative would result in less construction and onsite impervious surfaces, this alternative would result in less hydrology and water quality impacts in relation to the proposed project.

Wastewater Treatment and Disposal

Like the September Ranch Subdivision project, the Reduced Forest Impact Alternative will include construction and operation of an onsite wastewater treatment plant (WTP). Alternatively, in the event that the project does not include the construction and operation of an onsite WTP, wastewater flows generated by the project will be handled by the Carmel Area Wastewater District (CAWD). In comparison to the proposed project, the Reduced Forest Impact Alternative would result in an incremental decrease in generation of wastewater proportionate to the reduction in development. As identified in Section 4.5, Wastewater Treatment and Disposal, of this Draft REIR, all project-related wastewater treatment and disposal impacts will be reduced to levels that are considered less than

significant. However, since the Reduced Forest Impact Alternative will result in generating less wastewater, this alternative is considered to have less wastewater and treatment impacts in relation to the September Ranch Subdivision project.

Transportation and Circulation

The Reduced Forest Impact Alternative would generate less daily vehicle trips than the September Ranch Subdivision project. As identified in Section 4.6, Transportation and Circulation, of this Draft REIR, all project and cumulative-related transportation and circulation impacts can be reduced to levels that are considered less than significant. This alternative would result in the same sight distance impacts at the four-legged intersection of the project access road, September Ranch Road and Carmel Valley Road at Brookdale Drive. Similar to the proposed project, this alternative would be required to coordinate signal modification associated with installation of the project access road. Since, the Reduced Forest Impact Alternative would result in generating less traffic than the proposed project, this alternative is considered to have less transportation and circulation impacts in relation to the proposed project.

Air Quality

Vehicle emissions are the primary source of air pollutants. Air emissions would be incrementally reduced with the decrease in construction and long-term vehicle trips resulting from implementation of the Reduced Forest Impact Alternative. Air quality impacts associated with the September Ranch Subdivision project can be mitigated to levels that are considered less than significant. However, since the Reduced Forest Impact Alternative would generate less air quality emissions, this alternative is considered to have less air quality impacts in relation to the September Ranch Subdivision project.

Noise

Construction-related noise would be less than the proposed project because of the reduced intensity of development associated with the Reduced Forest Impact Alternative. As identified in Section 4.8, Noise, of this Draft REIR, project-related long-term noise impacts are associated with the location of the inclusionary housing in relation to Carmel Valley Road. While the Reduced Forest Impact Alternative would result in a slight reduction in operational traffic, it is not likely that this decrease is great enough to avoid all noise-related impacts. With the inclusion of the mitigation measures, also identified in Section 4.8 of this Draft REIR, noise impacts associated with this alternative and the proposed project would be reduced to less than significant. However, since the Reduced Forest Impact Alternative results in locating more units within close proximity to Carmel Valley Road, this alternative is considered to have greater noise impacts in relation to the proposed project.

Biological Resources

The Reduced Forest Impact Alternative would result in the removal of 1,459 Monterey pines and 768 coast live oak. In comparison to this alternative, the September Ranch project will result in the removal of 2,692 Monterey pines and 890 coast live oak. As identified in Section 4.9, Biological Resources, of this Draft REIR, all trees will be replaced at a ratio of 1:1. The mitigation measures identified in Section 4.9 of this Draft REIR would be required for the implementation of the Reduced Forest Impact Alternative. However, since the Reduced Forest Impact Alternative would result in

removing fewer trees and impacting less acreage, reducing the disturbance to plants and wildlife, this alternative is considered to have less biological resources impacts in relation to the proposed project.

Cultural Resources

There are no known cultural resources located on the project site. However, project implementation will involve earth moving activities, during which previously unknown cultural resources may be uncovered and disturbed. As identified in Section 4.10, Cultural Resources, of this Draft REIR, the September Ranch Subdivision project's potential cultural resources impacts can be mitigated to levels considered less than significant. However, the Reduced Forest Impact Alternative would result in a reduction in earth moving activities since it will result in less development; therefore, the Reduced Forest Impact Alternative is considered to have less cultural resources impacts in relation to the proposed project.

Aesthetics

Implementation of the Reduced Forest Impact Alternative would result in a decrease of the amount of acres developed, in addition to reducing the overall level of intensification onsite and in the project area. However, as identified in Section 4.11, Aesthetics, of this Draft REIR, the most visible component of the September Ranch Subdivision project is the inclusionary housing units. The Reduced Forest Impact Alternative would result in a greater number of inclusionary units being developed adjacent to Carmel Valley Road. Therefore, this alternative will result in a greater visual onsite alteration from this vantage point. Additionally, the increased development intensification along Carmel Valley Road may increase light and glare impacts. Since the Reduced Forest Impact Alternative would result in greater intensification along Carmel Valley Road, this alternative is considered to have greater aesthetic impacts in relation to the September Ranch Subdivision project.

Population, Housing and Employment

The Reduced Forest Impact Alternative would result in introducing 298 people and 94 residential units into the project area. Conversely, the proposed project will result in introducing 350 persons and 109 residential units into the project area. The Reduced Forest Impact Alternative results in an overall reduction in units proposed onsite; however, it would increase the amount of inclusionary housing. Both this alternative and the proposed project are within the parameters of AMBAG's population forecasts for the project area. As with the September Ranch project, the Reduced Forest Impact Alternative would be subject to the CVMP lot allocation system. The average annual rate of allocation within the CVMP area will be limited to 37 lots; however, subdivisions may be approved for up to the maximum number of lots for the life of the tentative map. For both the Reduced Forest Impact Alternative and the proposed September Ranch Subdivision project, the inclusionary housing units are exempt from the annual allocation system. As noted in Section 4.12, Population, Housing, and Employment, of the Draft REIR, the proposed project will not have a significant impact upon population, housing, and employment. However, since the Reduced Forest Impact Alternative would result in less market rate development and a greater amount of inclusionary housing; thus, providing an increase in low to moderate-income housing units, this alternative is considered to have beneficial population, housing, and employment impacts in relation to the proposed project.

Public Services and Utilities

Similar to the September Ranch Subdivision project, the Reduced Forest Impact Alternative would require upgrades and/or extensions of public services and utilities. In comparison to the proposed project, the Reduced Forest Impact Alternative would result in an incremental decrease in the demand for public services and utilities. However, as identified in Section 4.13, Public Services and Utilities, of this Draft REIR, the project's public services and utilities impacts will be mitigated to a level that is considered less than significant. Since the Reduced Forest Impact Alternative would not generate as great of a demand for public services and utilities, this alternative is considered to have less public service and utilities impacts in relation to the September Ranch Subdivision project.

6.3.2 Conclusions

When compared to the September Ranch Subdivision project, the Reduced Forest Impact Alternative would result in less geology and soils, water supply and availability, hydrology and water quality, wastewater treatment and disposal, transportation and circulation, air quality, noise, biological resources, cultural resources, and public services and utility impacts. Alternatively, the proposed project would result in less aesthetic and similar land use impacts as the Reduce Forest Impact Alternative. The Reduced Forest Impact Alternative would have a beneficial impact as it relates to population, housing, and employment, and it does meet the project's objective of providing market rate and low to moderate-income housing.

6.4 Reduced Forest Impact With Twenty Percent Inclusionary Housing Alternative

The Reduced Forest Impact with Twenty Percent Inclusionary Housing Alternative (Twenty Percent Alternative) would result in the development of 72 market rate residential and 15 inclusionary housing units on 45.52 acres. As with the September Ranch project, the equestrian center is to remain on 20.2 acres of the 891-acre project site (see Exhibit 6-3). The Twenty Percent Alternative would result in a reduction in grading of 4,000 cubic yards in comparison to the 100,000 cubic yards of grading proposed by the September Ranch Subdivision project.

Land Use and Planning

This alternative would result in a reduction of 22 market rate residential units and an increase of 7 inclusionary housing units, with an overall decrease of 15 onsite residential units. Although this alternative would reduce the intensity and amount of developable acreage onsite, it would result in the same land use compatibility impacts to onsite and surrounding land uses, but on a slightly lesser scale. Moreover, this alternative would result in the same conclusions with respect to consistency with the County's General Plan and other related planning programs, including the County's Inclusionary Housing Ordinance, in comparison to the September Ranch Subdivision project. Therefore, this alternative would result in similar land uses and planning impacts as that of the September Ranch project.

Geology and Soils

As with the September Ranch Subdivision project, the Twenty Percent Alternative would be required to adhere to the provisions of the UBC. The geology and soil impacts associated with implementation

Source: Shaw Architecture Planning, Inc., February 2004.

NORTH

1050 525 0 1050

SCALE IN FEET

Michael Brandman Associates

Exhibit 6-3
Reduced Forest Impact with 20% Inclusionary Alternative Map

of the Twenty Percent Alternative would be incrementally decreased, proportional to the reduction in land disturbance and number of habitable onsite structures; thereby, resulting in fewer residents located in seismic hazard areas that would be subject to strong groundshaking and other secondary seismic effects. Geology and soils impacts associated with the September Ranch Subdivision project can be mitigated to a level considered less than significant. However, due to the Twenty Percent Alternative's decrease in the amount of onsite development, this alternative is considered to have less geology and soils impacts in relation to the proposed project.

Water Supply and Availability

Due to the proposed reduction of 15 units, the Twenty Percent Alternative would result in a decrease in water demand when compared to the September Ranch Subdivision project. As identified in Section 4.3, Water Supply and Availability, of this Draft REIR, the proposed project will have an adequate supply of water and project implementation will not result in adversely affecting the availability of potable water within the SRA system or impact the CVA. The mitigation measures identified in Section 4.3 of this Draft REIR would be required for this alternative. However, since the Twenty Percent Alternative would result in a slight decrease in water demand, this alternative is considered to have less water supply and availability impacts in relation to the September Ranch Subdivision project.

Hydrology and Water Quality

In comparison to the September Ranch project, the Twenty Percent Alternative would result in a reduction of 3,000 cubic yards of grading, which would reduce the amount of erosion and sedimentation during construction activities. Moreover, due to the decrease in the overall development intensity, the amount of impervious surfaces and stormwater runoff would be less under this alternative. As with the proposed project, the Twenty Percent Alternative would be required to implement the mitigation measures identified in Section 4.4, Hydrology and Water Quality, of this Draft REIR. However, since the Twenty Percent Alternative would result in a reduction in earthmoving activities and fewer impervious surfaces, this alternative would result in less hydrology and water quality impacts in relation to the September Ranch Subdivision project.

Wastewater Treatment and Disposal

Similar to the September Ranch project, the Twenty Percent Alternative will include the construction and operation of an onsite wastewater treatment plant (WTP) or, alternatively, in the event that the project does not include the construction and operation of an onsite WTP, wastewater flows generated by the project will be handled by the CAWD. In comparison to the proposed project, the Twenty Percent Alternative would result in an incremental decrease in the generation of wastewater proportionate to the reduction in development. As identified in Section 4.5, Wastewater Treatment and Disposal, of this Draft REIR, all project-related wastewater treatment and disposal impacts will be reduced to levels considered less than significant. However, since the Twenty Percent Alternative will result in generating less wastewater, this alternative is considered to have less wastewater and treatment impacts in relation to the September Ranch Subdivision project.

Transportation and Circulation

The Twenty Percent Alternative would generate fewer daily vehicle trips than the September Ranch project. As identified in Section 4.6, Transportation and Circulation, of this Draft REIR, all project and cumulative-related transportation and circulation impacts can be reduced to levels that are considered less than significant. However, this alternative would result in the same sight distance impacts at the four-legged intersection of the project access road, September Ranch Road and Carmel Valley Road at Brookdale Drive. As with the proposed project, this alternative would be required to coordinate signal modification associated with installation of the project access road. Since the Twenty Percent Alternative would result in generating less traffic, it is considered to have less transportation and circulation impacts in relation to the September Ranch project.

Air Quality

Emissions are the primary source of air pollutants. Air emissions would be incrementally reduced with the reduction in construction activities and long-term vehicle trips that would occur under the Twenty Percent Alternative. Air quality impacts associated with the proposed project can be mitigated to levels considered less than significant. However, since the Twenty Percent Alternative would generate fewer air quality emissions, this alternative is considered to have less air quality impacts in relation to the proposed project.

Noise

In comparison to the September Ranch Subdivision project, construction-related noise would be less because of the reduced intensity of development associated with the Twenty Percent Alternative. As identified in Section 4.8, Noise, of this Draft REIR, project-related long-term noise impacts are associated with the location of the inclusionary housing in relation to Carmel Valley Road. While the Twenty Percent Alternative would result in a slight reduction in operational traffic, it is not likely that this decrease is great enough to avoid all noise-related impacts. With inclusion of the mitigation measures identified in Section 4.8 of this Draft REIR, noise impacts associated with this alternative and the proposed project would be reduced to less than significant. However, since the Twenty Percent Alternative results in locating more units in closer proximity to Carmel Valley Road, this alternative is considered to have greater noise impacts in relation to the September Ranch Subdivision project.

Biological Resources

The Twenty Percent Alternative would result in the removal of 1,438 Monterey pines and 583 coast live oak. In comparison, the September Ranch project will result in the removal of 2,692 Monterey pines and 890 coast live oak. As identified in Section 4.9, Biological Resources, of this Draft REIR, all trees will be replaced at a ratio of 1:1. The mitigation measures identified in Section 4.9 of this Draft REIR would be required for implementation of the Twenty Percent Alternative. However, since the Twenty Percent Alternative would result in removing fewer trees and impacting less acreage, thereby disturbing smaller numbers of vegetation and wildlife, this alternative is considered to have less biological resources impacts in relation to the September Ranch Subdivision project.

Cultural Resources

There are no known cultural resources located on the project site. However, project implementation will involve earth moving activities, during which unknown cultural resources may be uncovered and disturbed. As identified in Section 4.10, Cultural Resources, of this Draft REIR, the September Ranch Subdivision project's potential cultural resources impacts can be mitigated to levels that are considered less than significant. However, the Twenty Percent Alternative would result in a reduction in earth moving activities since it will result in less development; therefore, the Twenty Percent Alternative is considered to have less cultural resources impacts in relation to the September Ranch Subdivision project.

Aesthetics

Implementation of the Twenty Percent Alternative would result in a decrease of the amount of acres developed. Therefore, it would reduce the overall level of intensification onsite and in the project area. However, as identified in Section 4.11, Aesthetics of this Draft REIR, the most prominent visible component of the September Ranch Subdivision project is the inclusionary housing units. The Twenty Percent Alternative would result in the same number of inclusionary units developed adjacent to Carmel Valley Road. Thus, this alternative will result in similar aesthetic impacts from this vantage point. Since the Twenty Percent Alternative would result in the same level of development intensification along Carmel Valley Road, this alternative is considered to have similar aesthetic impacts in relation to the September Ranch Subdivision project.

Population, Housing, and Employment

The Twenty Percent Alternative would result in introducing 276 persons and 87 residential units into the project area. Conversely, the September Ranch Subdivision project will result in introducing 350 persons and 109 residential units into the project area. Although the Twenty Percent Alternative results in an overall reduction in proposed housing units it provides the same amount of inclusionary housing units as the proposed project. This alternative and the proposed project are within the parameters of AMBAG's population forecasts for the project area. As with the September Ranch Subdivision project, the Twenty Percent Alternative would be subject to the CVMP lot allocation system. The average annual rate of allocation within the CVMP area will be limited to 37 lots; however, subdivisions may be approved for up to the maximum number of lots for the life of the tentative map. As with the proposed project, the inclusionary housing units are exempt from the annual allocation system. As noted in Section 4.12, Population, Housing, and Employment of the Draft REIR, the September Ranch Subdivision project will not have a significant impact upon population, housing, and employment. However, since the Twenty Percent Alternative would result in less market rate development and maintain the same amount of inclusionary housing development; thereby providing a greater ratio of low to moderate-income housing, this alternative is considered to have beneficial population, housing, and employment impacts in relation to the proposed project.

Public Services and Utilities

Similar to the September Ranch Subdivision project, the Twenty Percent Alternative would require upgrades and/or extensions of public services and utilities. In comparison to the proposed project, the Twenty Percent Alternative would result in an incremental decrease in the demand for public services and utilities. However, as identified in Section 4.13, Public Services and Utilities, of this Draft REIR,

the project's public services and utilities impacts will be mitigated to a level considered less than significant. Since the Twenty Percent Alternative would not generate as great a demand for public services and utilities, this alternative is considered to have less public service and utilities impacts in relation to the September Ranch project.

6.4.1 Conclusions

When compared to the September Ranch Subdivision project, the Twenty Percent Alternative would result in less geology and soils, water supply and availability, hydrology and water quality, wastewater treatment and disposal, transportation and circulation, air quality, noise, biological resources, cultural resources, and public services and utility service impacts. Both the Twenty Percent Alternative and the proposed project would have similar land use and aesthetic impacts. The Twenty Percent Alternative would result in a beneficial impact on population, housing, and employment.

6.5 Environmentally Superior Alternative

The environmentally superior alternative is selected among the preceding alternatives and the September Ranch Subdivision project. An alternative that is environmentally superior would result in the fewest or least significant impacts and will feasibly attain most of the objectives of the planning effort. Based on the evaluation of the alternatives in this section, the No Project/No Development Alternative would result in fewer significant impacts than the September Ranch Subdivision project. CEQA states that if the environmentally superior alternative is the "No Project" alternative, the EIR shall also identify an environmentally superior alternative from other alternatives. The Planning Commission Recommendation Alternative is, thus, considered to be the environmentally superior alternative. However, although this alternative is determined to be environmentally superior to the proposed project, in relation to geology and soils, water supply and availability, hydrology and water quality, wastewater treatment and disposal, transportation and circulation, air quality, noise, biological resources, cultural resources, aesthetics, and public services and utilities, it would not fully obtain the objective of the September Ranch Subdivision project. Specifically, by reducing the scale of the project, the Planning Commission Recommendation Alternative reduces the amount of inclusionary housing onsite by almost fifty percent.

SECTION 7
OTHER CEQA CONSIDERATIONS

7.1 Significant Unavoidable Impacts

According to CEQA Guidelines Section 15126, an EIR must disclose the significant unavoidable impacts that will result from a project. Moreover, these guidelines state that an EIR should explain the implications of such impacts and the reasons why the project is being proposed, notwithstanding such impacts. Implementation of the September Ranch project will result in alteration of the physical environment. Section 4, Environmental Setting, Project Impacts, Mitigation Measures, and Level of Significance After Mitigation, and Section 5, Cumulative Impacts, of this Draft REIR provide a description of the potential environmental impacts of the September Ranch project, as well as measures to reduce the environmental impacts to the maximum extent feasible. After implementation of the September Ranch project and the project related mitigation measures, it has been determined that all project related impacts can be feasibly mitigated to a level that is considered to be less than significant. In addition, the project does not result in any significant unavoidable cumulative impacts.

7.2 Significant Irreversible Changes

The environmental effects of the September Ranch project are discussed in Sections 4 and 5 of this Draft REIR and are summarized in Table 2-1, Executive Summary. Implementation of the September Ranch project will require the long-term commitment of natural resources, as described below.

Approval and implementation of the actions related to the development of the September Ranch project will result in an irretrievable commitment of non-renewable resources such as energy supplies. The energy resource demands will be used for construction, heating and cooling of buildings, transportation of people and goods, as well as lighting and other energy associated needs.

Non-renewable resources will be committed primarily in the form of fossil fuels, and will include fuel, oil, natural gas, and gasoline used by vehicles and equipment associated with construction of the September Ranch project. Accidental spillage of fuels, paint, or other construction-related materials may occur at the project site during construction. However, these types of accidents are anticipated to be limited because experienced construction workers would be overseeing construction activities. These types of potential spills would not result in irreversible conversion of the property and certainly would not convert more land necessary for development of the project itself. The consumption of other non-renewable resources or slowly renewable resources will result from development of the September Ranch project. Those resources include, but are not limited to, lumber and other forest products, sand and gravel, photochemical construction materials, steel, copper, lead, and water. Moreover, development of the proposed project would result in an irreversible environmental change at the project site. Since alternative energy sources such as solar and wind energy are not currently in widespread use, it is unlikely that any real savings in non-renewable energy supplies (e.g., oil and gas) will be realized in the immediate future.

7.3 Growth Inducing Impacts

There are two types of growth inducing impacts that a project may have: direct and indirect. To assess the potential for growth-inducing impacts, the project characteristics that may encourage and facilitate activities that individually or cumulatively may affect the environment must be evaluated (CEQA Guidelines Section 15126.2[d]).

Direct growth inducing impacts occur when development of a project imposes new burdens on a community by directly inducing population growth, or by leading to construction of additional developments in the same area. Also included in this category, are projects that remove physical obstacles to population growth (such as a new road into an undeveloped area or a wastewater treatment plant with excess capacity that could allow additional development in the service area). Construction of these types of infrastructure projects cannot be considered isolated from the developments they facilitate and serve. Projects that physically remove obstacles to growth, or projects that indirectly induce growth are those, which may provide a catalyst for future unrelated development in an area such as a new residential community that requires additional commercial uses to support residents.

The September Ranch project will result in development of 109 residential units which will directly induce growth. Such growth is in accordance with the County of Monterey General Plan and the Carmel Valley Master Plan (CVMP), which set forth the goals and policies for the project area. Development within the CVMP area is based upon a quota system that allocates the number of units that may be developed annually. Therefore, while implementation of the September Ranch project will introduce infrastructures such as roadways, public services, and utilities that may indirectly induce growth, indirect growth spurred by project-related infrastructure improvements and extensions would be limited by the CVMP quota system. Furthermore, General Plan and CVMP policies relating to traffic, drainage, water supply, and sewage disposal may further limit the extent and timing of development in the Carmel Valley. Additionally, no additional open space lands suitable for development are located adjacent to the project site, further reducing the potential of project-related indirect growth.

7.3.1 Riparian Rights

In Save Our Peninsula Committee v. Monterey County Board of Supervisors, the appellate court directed the County to discuss in the REIR whether water supply aspects of the September Ranch project will have growth inducing impacts. In particular, although the court did not make a determination that water supply aspects will have growth inducing impacts, the court cast the issue as a question, "Does the exercise [of a riparian right or overlying right] create a precedent for other subdivisions and thus result in a growth inducing impact?" The determination of whether a riparian right exists at a particular parcel is fact-specific and unique to each parcel. As discussed in Section 4.3, Water Supply and Availability of this Draft REIR, Kennedy/Jenks Consultants (KJC) prepared a water rights analysis which concluded that riparian rights do exist at the September Ranch project site. The regulation of riparian water resources is under the jurisdiction of the California courts and the State Water Resources Control Board who collectively determine whether a particular water use is reasonable and beneficial. Therefore, the County has no direct approval authority over the reasonable and beneficial use of riparian water rights; however, the County in its role as lead agency of the September Ranch project, can indirectly regulate the use of riparian waters in that the lead agency can

suggest conditions (mitigation) of the project's use of water to the extent that water use will create a significant adverse impact. In accordance with CEQA, the County can only impose conditions (mitigation) if they will address the cause of an identified impact, and only proportional to the adversity of the impact. Yet, the position can be forwarded that if the County has the ability to regulate groundwater resources in their role as lead agency, then groundwater resources may have a growth inducing impact.

As discussed in Section 4.3 of this Draft REIR, the September Ranch project will have limited to non-existent impacts from riparian water use, thereby limiting the County's ability to regulate the use of riparian water.

Additionally, as discussed in Section 4.3, of this Draft REIR, the September Ranch project will either rely on percolating groundwater from an aquifer whose boundaries are contiguous with the boundaries of the September Ranch property or underflow from the nearby Carmel Valley aquifer.

7.3.2 Overlying Rights

An overlying right is also a property right which is attached to land overlying percolating groundwater. As with riparian rights, the California courts have the authority to determine whether a particular exercise of the overlying right is reasonable and beneficial.

Similar to riparian rights, if one may hold the position that the County has the ability to regulate groundwater resources, through its role as a lead agency, than the one may hold the position that growth inducing impacts exist. In Baldwin v. County of Tehama (1994) 31 Cal. App. 4th 166, the courts determined that because counties have some authority to regulate groundwater, it can be considered that in certifying an EIR for a development project that relies on groundwater, without placing restrictions on the use of that groundwater, a county might encourage development of other properties within its jurisdiction that overlie that same groundwater basin; thus, creating growth inducing impacts.

Yet in relation to the September Ranch project, the September Ranch property and the boundaries of the groundwater basin are co-extensive; thus, no other properties overlie the September Ranch basin. As such, the availability of groundwater to serve the September Ranch project site does not affect the availability of groundwater from the basin to serve any other property. Thus, other properties and subsequently potential future development will not rely on the County's tacit approval (through the absence of mitigation) of September Ranch's use of groundwater as allowing additional growth through the introduction of a new overlying use for the September Ranch aquifer.

SECTION 8
ORGANIZATIONS AND PERSONS CONSULTED

8.1 Public Agencies

Carmel Valley Fire Protection District ..... Chief Sydney Reade

Monterey County Sheriff's Department ..... Commander Lonnie Heffington

Carmel Unified School District ..... Judy Long

Monterey County Parks Department ..... Rich Brandau
John Pinio
Meg Clovis
Al Miyamoto

Monterey County Waste Management District ..... Richard Shedden

Monterey County Health Department ..... Allen Stroh
Mary Anne Dennis
Laura Lawrence

Monterey County Public Works Department ..... Lew Baumann
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Paul Greenway

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Al Mulholland
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8.2 Private Organizations

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SECTION 10
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