SECTION 3
MASTER RESPONSES TO COMMENTS ON DRAFT REIR (DECEMBER 2004) AND RECIRCULATED DRAFT REIR (FEBRUARY 2006)

3.1 Introduction

In accordance with § 15088 of the California Environmental Quality Act (CEQA) Guidelines, the County of Monterey as the lead agency evaluated the comments received on the Recirculated Draft REIR (State Clearinghouse No. 1995083033) for the September Ranch Subdivision Project and has prepared the following responses to the comments received. This Response to Comments document becomes part of the Final REIR for the project in accordance with § 15132 of the State CEQA Guidelines.

The Draft REIR was distributed for a 45-day public review period by the County of Monterey on December 30, 2004. Copies of the Draft REIR document were distributed to state, regional, and local agencies, local libraries, and was available at the County Planning and Building Inspection Counter. The Draft REIR were also available in electronic form on the County's website.

In February 2006 the County of Monterey also prepared a Recirculated Draft REIR. Under CEQA Guidelines Section 15088.5(c) if a revision to an EIR is limited to a few chapters or portion of the EIR, the County need only circulate the chapters or portions that have been modified. The Recirculated Draft REIR included the recirculation of Section 4.3, Water Supply and Availability and Appendix C, Hydrogeologic Report (entire section recirculated), Section 4.9, Biological Resources (entire section recirculated), Section 5, Cumulative Impacts Water Supply and Biological Resources (only Water Supply and related Biological Resources portions affected), Section 6, Alternatives (entire section recirculated), and Section 7, Other CEQA Considerations (entire section recirculated). The Recirculated Draft REIR was distributed for a 45-day public review period by the County of Monterey on February 15, 2006.

For those portions of the Draft REIR for the September Ranch Subdivision Project SCH No. 1995083033 (December 2004) that have been superceded by the Recirculated Portion of the Draft REIR for the September Ranch Subdivision Project SCH No. 199508033 (February 2006) this section refers to the "Recirculated Draft REIR" All other portions are cited as "Draft REIR."

3.2 Master Responses

A number of comment letters contain comments on the same topic. To address these similar comments more efficiently, Master Responses (coded as MR-1, MR-2, etc.) are provided below and referenced in the individual response to comments in Sections 4 and 5.

MR-1: Biological Resources Impacts: Mitigation Revisions and Clarifications

Several comments were received regarding the ability of the County to enforce the mitigation measures outlined in Section 4.9, Biological Resources, of the Draft REIR and Recirculated Draft EIR adequately and the adequacy of the mitigation measures to reduce significant biological resources impacts. The revisions to the mitigation measures, as appropriate, are outlined in Section 6, Errata.

MR-2: Adequacy of Mitigation Measures

As stated in CEQA § 15126.4(1)(B), the creation of mitigation measures should not be deferred until some future time. However, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way. Mitigation Measures 4.9-1 through 4.9-4 include a long list of specific performance standards that would govern the required Forest Management Plan (the final Forest Management Plan will include a mitigation and monitoring component and is also referenced as the Forest Management and Monitoring Plan), Open Space Management Plan, Grasslands Management Plan including, for example, a prohibition on planting/introduction of nonnative invasive plant species permanent open space dedication of Monterey pine/coast live oak forest on a 3:1 ratio, a requirement that 70% of plantings shall be established/surviving for seven years until compliance is achieved, requiring all replacement trees to be of local genetic stock, maintaining pre-construction soil levels around tree trunks and roots, etc. There are many more performance standards included. Please see Recirculated Draft REIR at pp. 4.9-22 through 4.9-26.

As stated in CEQA § 15126.4(a)(2) mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments. In the case of the adoption of a plan, policy, regulation, or other public project, mitigation measures can be incorporated into the plan, policy, regulation, or project design. Additionally, as identified in the County Draft Conditions of Approval, these plans are subject to the review and approval of the County Planning and Building Inspection Department at various stages of project implementation. For instance, the Forest Management Plan was prepared in 1995 by Hugh E Smith, Professional Forester, and will be continually updated and a mitigation and monitoring component will be prepared as individual sites are developed, prior to the recordation of final maps. The other management plans have not yet been prepared; as noted, they are not required to be prepared prior to certification of an EIR as long as the REIR contains performance standards sufficient to reduce impacts to less than significant. Certain plans, such as the drainage plan, are required prior to the issuance of the grading permit whereas other plans, such as the Open Space Management Plan and the Grassland Management Plan will be required prior to the recordation of the final map. The County has prepared draft conditions of approval that, among other things, outline the timing of each of the plans required for project implementation. The draft conditions of approval referenced in this document are those that were presented in a public hearing at the County of Monterey Subdivision Committee on June 8, 2006. These draft conditions are continuing to be refined pursuant to the general land use process; the draft conditions are available for public review at the County of Monterey, Planning and Building Inspection Department and will be presented at subsequent public hearings of the County of Monterey Planning Commission and Board of Supervisors.

MR-3: Conditions, Covenants, and Restrictions/Mitigation Measure Enforcement

To ensure that the landscaping restrictions are adhered to, the fee title acquisition or conservation easement as described in the Open Space Management Plan shall itemize the conditions, covenants, and restrictions (CC&Rs) and have the homeowner sign-off on the restrictions. The conservation easement shall prohibit activities and land uses that could adversely affect the communities that are to be protected (*e.g.*, development, discing, non-native species plantings, and plowing). The conservation easement shall be submitted to the County for review and approval prior to recordation.

MR-4: Loss of Trees and Mitigation for Tree Removal

According to research conducted by the Sierra Nevada Research Center Pacific Southwest Research Station, for the past two million years, California Monterey pine populations have been small and fragmented. These populations expand and contract, colonizing new areas while dying off in other areas. Over the long term, the Monterey pine survives contraction to remnant populations by re-colonizing. Therefore, it may be logical to preserve Monterey pine populations onsite in areas that do not currently support Monterey pines because these areas may have supported such populations and/or may be able to support such populations in the future due to the proper ecological and climatic conditions.

As stated on page 4.9-1 of the Reciruclated Draft REIR, for purposes of the biological assessment and subsequently the EIR analysis, it was conservatively assumed that project implementation would result in the clearing of 0.33 acres clearing per residential lot, which would directly affect 34.9 acres of the existing 426 acres of Monterey pine forest located on the project site; however, as a result of the design review process for development of the individual lots, the actually tree loss is expected to be less. The proposed project will result in the permanent dedication of 3 acres for every 1 acre of lost Monterey pine/coast live oak forest into a conservation easement, which will be managed by a third party of interest. It is the intent of the project applicant to dedicate portions of the September Ranch Subdivision project site for such conservation easements. Appropriate sites will be determined as part of the Forest Management Plan. Additionally, to reduce the loss of individual trees Mitigation Measure 4.9-3 identifies that the project shall include the replacement planting of all oaks or pines that are removed as a result of project implementation and that are 6-inches or larger on ratio of 1:1. To assure success, Mitigation Measure 4.9-3 also identifies that planting shall be monitored annually for 7 years and that 100 percent of the plantings shall be established or still be surviving in 7 years (as determined by a professional forester) or replacement and monitoring shall continue until compliance is achieved. Mitigation Measure 4.9-3 has been revised to include that the location and species of all required replacement trees shall be mapped so that they can be monitored for successful establishment over the 7-year period. The monitoring shall be extended for individual trees that die or are in poor health and must be replaced. Additionally, Mitigation Measure 4.9-4, outlines the actions that are to be undertaken to avoid mechanical damage to pines not slated for removal. As noted in the Section 6, Errata, of this document, Mitigation Measure 4.9-4 has been supplemented to require that pines adjacent to ones slated for removal will be protected individually with orange construction fencing placed around their drip line. Pines not slated for removal shall not be damaged. Retained trees shall be further protected by removing any adjacent trees individually. Therefore, mechanical damage to trees not identified for removal is not anticipated.

Lastly, it is noted that the number of trees identified for removal in the Reciruclated Draft REIR (3,582) is greater than that presented in the 1998 Final EIR prepared for the proposed project. The tree removal estimates conducted for the 1998 Final EIR did not include tree removal for the individual lots since the individual lot owners would build their own homes. Conversely, the tree removal estimates provided in the current Recirculated Draft REIR, considers all components of the proposed project, including site preparation, lot development, and development of ancillary facilities (i.e. roadways, utilities, etc).

The number of trees identified for removal would decrease if the staff-recommended alternative were approved rather than the proposed project (please see MR-16).

MR-5: Monterey Pine Forest Biological Sensitivity

Numerous comments were submitted on the Draft EIR noting that Carmel Valley Master Plan policy 7.1.1.1 allows the County of Monterey to identify areas of biological significance. The County of Monterey has not identified the Monterey pine forest located on the September Ranch project site as an area of biological sensitivity. Additionally, the Monterey pine forest is not listed by the California Department of Fish and Game (CDFG) as a California Species of Special Concern. However, it is listed by the CNPS as a List 1B species, meaning that the species is considered rare, threatened, and endangered in California, but more common elsewhere, and accordingly impacts to the species were considered in the preparation of the CEQA documentation. The Draft REIR and the Recirculated DREIR conclude that impacts would be less than significant with mitigation. The project analysis is consistent with CVMP 7.1.1.1..

The project is designed to maximize use of existing roadway alignments and minimize clearing and grading for site improvements. However, in determining impacts to the onsite vegetation it was assumed that habitat values within the building envelope of each lot will be lost as a result of project buildout. The project will result in the loss of 34.9 acres of the 426 acres of Monterey pine/coast live oak forest habitat onsite. In all, considering roadway development and lot buildout, approximately four percent of the Monterey pines and six percent of the coast live oak tress will be removed. The Draft REIR considers this a potentially significant impact prior to mitigation. As outlined in Mitigation Measures 4.9-1 through 4.9-5 (and as revised, see Section 6, Errata, of this document), the project applicant is required to prepare and adhere to a Forest Management and Monitoring Plan (the Final Forest Management Plan will include a mitigation and monitoring component and is referenced as the Forest Management and Monitoring Plan), which reduces these impacts to less than significant.

MR-6: Monterey Pine Forest Fragmentation and Pitch Canker Susceptibility

Several comments expressed a concern that the proposed project would result in increased potential for fragmentation and resulting impacts, such as the spread of pitch canker, in the Monterey pine forest. As a general matter, fragmentation occurs when forest areas are bisected or separate from each other by permanent structures or changes like roadways or clear-cutting to an extent that affects the ability of a forest to regenerate itself by natural means. The following summarizes information presented in the Recirculated Draft REIR regarding the potential for impacts to the pine forest resulting from the proposed project, as well as additional information and review provided in response to comments. As explained below, the additional review supports the conclusions in the Recirculated Draft REIR that with the mitigation proposed in the Recirculated Draft REIR, the

proposed project would result in less than significant impacts to Monterey pines and related biological resources.

A total of 3,758 acres of contiguous and relatively large ownerships occur in the greater September Ranch project area. Monterey pine forest is located on 3,042.5 acres of the 3,758 acres, or rather on 80 percent of the surrounding area. Impacts were assessed under the conservative assumption that project implementation would result in the clearing of 0.33 acres clearing per residential lot, which would directly affect 34.9 acres of the existing 426 acres of Monterey pine forest located on the project site; however, as a result of the design review process for development of the individual lots, the actuall tree loss is expected to be less. The loss of the 34.9 acres of Monterey pine forest located on the project site equates to a loss of approximately 1 percent of the total acreage of Monterey pine forest habitat in the greater project area. Based on this level disturbance, the ability of Monterey pines to pollinate conspecifics at a distance between 48 to 85 meters, and the factors assessed below, the Recirculated Draft REIR concludes that design of the September Ranch does not constitute fragmentation.

Fragmentation evolved from the concept of "island biogeography equilibrium theory," depicting forest habitats becoming isolated islands as they fragment. The isolating patches of similar habitat typically refers to forest cover. Habitat can be fragmented either naturally, such as disease, or by anthropogenic activities, such as clear cutting. However, on-the-ground fragmentation is difficult to quantify and although fragmentation indicators are being researched and tested, no common set of indicators exist. The majority of studies conducted to determine fragmentation were based mainly on plants and birds and the lack of mobility between areas of forests and therefore a reduction in the potential viability of the population. The question of how to define and measure fragmentation, the degree in which forested areas are being broken into smaller patches, is complex as fragmentation can be anything from a road bisecting a forest to suburban sprawl. Overall, fragmentation can be defined as the dividing of contiguous blocks of forest by roads, development, and other non-forest uses.

When evaluating the viability and reproduction of a pine forest, the issue of fragmentation becomes more nebulous. Most pine species produce abundant seed, which is important for long-term survival. Pine pollen is wind driven and though while most of the pollen may settle within a short distance of the source tree, there is a good likelihood that a small portion will travel large distances (Rogers 2002). For example, pollen measurements in a Monterey plantation showed that less than 2% of the pollen fallen on any given tree was from a neighbor (Rogers 2002). As shown in a study using nuclear microsatellites to determine paternal genes of Scot pine (*Pinus sylvestris*) pines, the average effective pollen dispersal distance within a stand was 48 meters (or 83 m excluding self-pollinators) (Robledo-Arnuncio and L. Gil 2005). Half of the effective pollen measured was dispersed within 11 m, and 7% beyond 200 m (Robledo-Arnuncio and L. Gil 2005). Therefore, there is the potential for long-term genetic flow between forests.

In addition to pollination, pine regeneration is an important factor in forest ecology. Staub (2002), a registered professional forester, reports that existing development in pine forest areas along the Monterey Peninsula does not significantly affect regeneration except in the areas actually converted. Excessive shade is usually the greatest barrier to pine regeneration in denser strands, and there may be a short-term increase in pine generation at the margins of development areas due to the increased light availability (Staub 2002). The USFS (http://www.fs.fed.us/database/feis/plants/tree/pinrad/

botanical_and_ecological_characteristics.html) states that Monterey pine normally invades dry sites with poor, shallow soils. It also invades areas after land clearance, grazing, fire, or logging with open areas. Monterey pine has intermediate shade tolerance and as it matures, it becomes even less tolerant of shade, and shows optimal growth in full sunlight. Therefore, the disturbance to the September Ranch forest may benefit some individuals.

In addition to evaluation of the project's impact upon potential Monterey pine forest fragmentation by the County's biology consultant, the existence of pitch canker in the project area, the potential for project implementation to contribute to accelerating the spread of pitch canker was also investigated by professional forester Steven Staub. Surveys conducted in the last quarter of 2004 in Jacks Peak Regional Park revealed that most trees within the park had no indications of pitch canker symptoms. In all, during the survey, seven trees were observed with symptoms. All seven trees observed with symptoms are considered to have the lowest symptom levels as rated under the UC Berkeley Pitch Canker system rating.

A reconnaissance level survey of the project site was conducted on March 14, 2002 by Steven Staub to evaluate the incidence of pitch canker symptoms, overall forest health, and variation of regeneration characteristics. Pines in all areas of the project site were visually inspected for pitch canker symptoms. As a result of the survey, 7 individual pines with pitch canker were identified. The 7 infected pines were located in the southern portion of the project site at elevations lower than 250 feet. Therefore, given the distance between the trees displaying symptoms onsite and Jacks Peak Regional Park, it is the professional opinion of the County's biological resources consultant, Wildlife Research Associates that the proposed project would not significantly accelerate the spread of pitch canker from the site to Jacks Peak Regional Park.

Mitigation Measure 4.9-5 as identified in the Recirculated Draft REIR provides actions to be undertaken to prevent and/or slow down the spread of disease. As discussed on page 4.9-26 of the Recirculated Draft REIR, the incidence of pitch canker symptoms decrease in frequency and severity at higher elevations and as the distance from the coast increases. As noted above, the proposed project would not result in fragmentation. As an additional factor buffering against an increase in pitch canker, it is noted that the September Ranch project site is located 3 miles inland. Thus, due to the geographic locations, the threat of pitch canker is lessened.

Some comments also expressed a concern regarding genetic diversity. One comment letter states that the Monterey pine has a modest to fairly high genetic diversity, depending on the type of genetics diversity studied (Rogers, et al 2006). Compared to the four other Monterey pine populations, the population in Monterey County has shown to have the high amount of genetic diversity, and may reflect a broader array of environments (both spatially and temporally) than in any of the other populations (Rogers, et al. 2006). However, no peer-reviewed studies have been published that focuses on the fine-scale genetic diversity in the population (Rogers, et al. 2006). Therefore, it is not possible given the existing state of knowledge to accurately predict the level at which fragmentation, if it were substantially adverse, would affect the genetic diversity of the pine population at September Ranch. Rogers, et al. (2006) also state that larger, contiguous, genetically diverse forests are more resilient to stresses than smaller fragmented, genetically depauperate plant populations. However, no definition of size attributable to fragmentation has been provided. Based on the information available, and the conclusions regarding the potential for fragmentation above, it is concluded that the

proposed development will not impede the pollen flows of the pines on site and so the diverse genetic available within this population will remain available.

The potential for "edge effects" was also considered. An "edge effect" consists generally of impacts to the edges of forest areas resulting from clearing or impacts within adjacent forest areas. Although there is no absolute distance established in the scientific literature, as a general matter edges around cleared areas (i.e., development envelopes) tend to be affected approximately 50 meters into forest habitats. For the September Ranch proposed project approximately 4.2807 acres for each 0.33-acre development envelope would have the potential to experience edge effects. The potential for edge effects would be reduced if the number of units were reduced upon project approval.

At least four taxa would potentially be affected by edge effects; amphibians, birds, mammals and pine trees. Plants that were studied were mostly herbaceous. The effects ranged from population isolation (over large clear-cut areas) to loss of breeding habitat for birds. The September Ranch project area main taxa that may be impacted are birds and trees. The Recirculated Draft REIR concludes that there are less than substantial impacts to breeding birds, because there will be no direct loss of individuals during the breeding season, and once the disturbance has been removed (building houses), the birds will use the 50 meters of habitat within a clearing.

No research was identified that addressed edge effects on pines; however, it is expected that the potential effects would be the following: change in light duration and intensity, soil temperature, and change in wind conditions. Monterey pines prefer to have more light for their growth, becoming thin in dense forests. Monterey pines tend to prefer dry, shallow soils, and to this extent, the creation of an edge may benefit them. Moreover, new wind conditions may not affect the Monterey pines as they are often seen in isolated areas in windy conditions. Based on the foregoing, although it is not possible to quantify the precise effects that the creation of an "edge" may have on Monterey pines, potential impacts are anticipated to be less than substantial, and in some instances it is possible that the creation of an edge will benefit some areas of Monterey pine by providing more light and drier soils.

MR-7: Botanical Surveys

Plant surveys were conducted and results are provided in reports prepared by Zander Associates in 2000 through 2005. Specifically, surveys were conducted on February 20, 1981 (Wesco 1981); November 19 and 21, 1994 and January 27, 1995 (Mori 1995a); March 16 and 17, 1995 (Mori 1995b); April 27, May 19, and June 13, 1995 (Zander 1995); April 11, 26, May 9, and August 13, 2001 (Zander 2002); and on April 5, 26, 27, 28, and May 31, 2005 (Zander 2005).

The April 2001 surveys focused on the Pacific Grove clover and the Santa Cruz clover. Neither was observed onsite, although four other clover species were observed. However, as noted on page 4.9-11 of the Recirculated Draft REIR, surveys conducted in 2005 confirmed the presence of Pacific Grove clover in the eastern portion of the project site between lots 18-22. Small leaved lomatium and adders tongue were reconfirmed during these species surveys. Gairdner's yampah and Congdon's tarplant were surveyed for in August 2001 and were not found.

Dr. Richard Arnold conducted surveys for buckwheat and Smith's blue butterfly in 1995, 1996, and in July and August 2001. Please refer to page 4.9-1 of the Draft REIR for a list of reports in which

surveys results were identified. A list of special-status species and surveys dates is located in the Draft REIR's Appendix H, in the Biological Assessment's Appendix A.

Surveys were conducted in plant communities where special-status species are most likely to occur and are considered representative areas. As shown in Appendix H, surveys for special-status plant species were conducted at the appropriate flowering time to identify locations of the species. Absence is assumed if special-status species are not found when surveys are conducted at the proper time of the year.

Please refer to Mitigation Measure 4.9-10 for special-status plant surveys for known building envelopes and Mitigation Measure 4.9-7 for protection for special-status plants through design, setback, salvage, and relocation. A March 2005 meeting with the California Department of Fish and Game and the project proponent revealed that surveys for Monterey spineflower Eastwood's goldenbush and Hooker's and Monterey manzanita have not been conducted because no suitable habitat occurs onsite. Nonetheless, while CDFG concurred that there was no suitable habitat for these species onsite, as discussed on page 4.9-12 of the Recirculated DREIR, as a follow up to the meeting with CDFG, focused surveys were conducted by Zander Associates during the optimum blooming period. None of these species were observed onsite during the 2005 focused surveys. MBA reviewed the survey reports and concurs with the findings as presented by Zander Associates.

MR-8: Weed Control

Please refer to Mitigation Measures 4.9-1 through 4.9-3 for the management plan that will include weed control measures. Additional control measures will include a) mechanical measures: such as mowing, digging out root balls, and the wash down of equipment, and b) chemical measures: such as herbicides that must be directed by a licensed pest control operator. Subsequent spraying or control of weeds may be necessary beyond the first removal. Areas of infestation, such as French broom, will be replanted with native species and monitored to ensure removal of invasive species to the extent possible and such areas would be considered a benefit to the project. Additionally, as a Condition of Approval, the County has included that prior to the filing of the final map, the applicant shall submit CC&Rs for review and approval of the Planning Director, which prohibit introduction of nonnative invasive plant species within any portion of the proposed lots.

MR-9: Fire Danger/Provision of Services

As discussed in Section 4.13, Public Services and Utilities, of the Draft REIR, information was solicited from the Carmel Valley Fire Protection District in relation to the proposed project and the ability of the District to serve the project site adequately The District indicated that it can adequately serve the proposed project. As discussed on page 4.13-1 of the Draft REIR, project design will be required to adhere to the national standards and California/County ordinances regarding defensible space and distance of ornamental vegetation from buildings, including County Ordinance 18.56.090. In addition, the County per the Fire Protection District, has also added standards and special conditions to the project.

MR-10: Trip Generation and Distribution

Numerous comments were submitted on the Draft REIR questioning the trip generation and distribution assumptions that were utilized in the Traffic Impact Study prepared by TJKM for the proposed project.

The proposed project as presented in the Draft REIR consists of 94 market-rate homes and 15 inclusionary units. The Institute of Traffic Engineers (ITE) Trip Generation Manual, 6th Edition assigns a lower trip generation rate to inclusionary units than single-family residential homes. The traffic analysis prepared for the proposed project was conservatively based on the project consisting of 109 single-family homes; conversely, the 1998 Final EIR utilized a lower trip generation rate for the inclusionary housing units. The ITE rate for single-family homes and used in the Recirculated DREIR is 9.57 trips per unit per day and 1.01 trips per unit during the PM peak hour. The ITE trip generation rates take into account all trips generated by a single-family home and the rates do not differentiate between trips associated with residents or non-residents of a single-family home. In a separate study, TJKM conducted a trip generation survey of 64 "high-end" homes in Los Gatos. The results of TJKM's findings were similar to the published ITE rates, whereas TJKM's survey results were 0.98 trips per single-family home versus the published ITE rate of 1.01 trips per single-family home.

The trip distribution assumptions are primarily based upon existing travel patterns home; thus, demonstrating the validity of the ITE assumptions utilized for analyzing the project.

MR-11: Sight Distance

Several comments were submitted concerning the sight distance for an outbound driver looking west at September Ranch Road. TJKM has prepared a MR to clarify the language and terminology and to address the Caltrans Highway Design Manual sight distance standards and the evaluation of potential sight distance impacts.

An outbound drive is one where a driver is exiting the project access road. Looking to the left refers to an outbound driver looking to the east. The 375-foot sight distance refers to being able to see a six inch object on the roadway. Given that most vehicles are at least three feet tall, drivers on Carmel Valley Road and drivers on September Ranch Road are expected to be able to view each other from approximately 600 feet. While the Caltrans Highway Design Manual does not identify the origins of the six inch standard, it is the professional opinion of TJKM that the six inch standard was established to allow drivers to react to small objects on the roadway.

September Ranch Road drivers looking to the east during the morning and drivers looking to the west during the afternoon may be affected by the sun during certain times of the year. As outlined in Mitigation Measure 4.6-8, with project implementation, the County will be required to install a signal at Carmel Valley Road/Brookdale Drive/September Ranch Road. A detailed signal design will be prepared taking into account the visibility of each signal head on each approach, including the proper location of the signal heads for the four approaches at the intersection to allow approaching drivers time to react to the signal indication and stop as needed. If necessary, standard signal ahead warning signs can be posted. With this mitigation, the addition of project traffic is not expected to increase the

accident rate at this intersection. It also should be noted that the County of Monterey Public Works Department does not have any records of any reported accidents at this intersection.

Mitigation Measure 4.6-9 requires the installation of warning signs. Intersection warning signs can be place approximately 500 feet in advance of an intersection; however, the actual location should be determined based upon field conditions. A flashing beacon is not recommended for the warning sign.

The incorporation of Mitigation Measures 4.6-8 and 4.6-9 will reduce project related sight distance impacts at this intersection to less than significant. It was not within TJKM's scope of work to evaluate sight distance impacts at any other study area intersections.

If transit pullout(s) are approved for Carmel Valley Road, sight distance measurements can be made as part of the detailed design.

MR-12: Transit Stop Locations/Safety/Effectiveness

The Final Traffic Impact Study for the September Ranch Subdivision, dated October 5, 2005 did not recommend a transit stop. Mitigation Measure 4.6-7 is eliminated from the Final REIR and the subsequent Mitigation Measures (4.6-8 and 4.6-9) have been renumbered accordingly. Section 6, Errata and Refinements, to the REIR, includes these revisions. However, to assure compliance with the County of Monterey Code 21.64.250, the County will require the transit stop as a Condition of Approval and therefore, the County will require a transit stop to serve the project as a condition of approval to assure compliance with the County ordinance.

MR-13: Traffic Impact Fees

As outlined in Mitigation Measures 4.6-3 through 4.6-4, the project applicant will be required to participate in the Carmel Valley Master Plan Traffic Impact Fees (CVTIF) program for signalization, intersection, and roadway improvements to reduce project-related and cumulative traffic impacts.

Per CEQA Guidelines § 15130(a)(3), payment of fees is an equitable and typical method for collecting the necessary funds to implement transportation improvements. Monterey County has been collecting the CVTIF, which will be used for funding the planned improvements along Carmel Valley Road. Similarly, the Transportation Agency for Monterey County (TAMC) completed a project study report for Highway 1 in the Carmel Valley Area to outline improvement alternatives for the corridor. The agency has been collecting transportation impact fee from approved projects in the area, to fund the planned improvements along the Highway 1 corridor. Specifically, the Carmel Valley Planning Area has adopted the following policy regarding traffic impact fees:

CARMEL VALLEY POLICY NO. 15

To mitigate traffic impacts, the Board of Supervisors shall continue imposing fees to pay for road improvements to Carmel Valley Planning Area roadways as a condition of granting of building permits. With respect to the imposition of such fees, the zone of influence shall be the Carmel Valley Planning Area and adjoining developing areas where primary access and/or commerce is via Carmel Valley Planning Area roadways, as set forth in the map in the Board of Supervisors' Resolution 92-395. Fees collected shall be expended for the design and construction of mitigation improvements to

the impacted roadways within the Carmel Valley Planning Area. The construction of such improvements shall be prioritized in order of the need for traffic safety. Such priorities need not necessarily include site-specific improvements to mitigate impacts of the project that paid the fees. In order to ameliorate congestion at the mouth of Carmel Valley, the use of traffic impact fees to extend the Highway 1 climbing lane to Rio Road must be a priority.

After the CVTIF program improvements have been implemented, project area intersections will operate acceptably under cumulative conditions.

MR-14: Aesthetics - Inclusionary Housing

In response to comments regarding the visibility of the inclusionary housing units, additional viewshed analysis was conducted on March 19, 2005. Specifically, photographs were taken to illustrate the location and future visibility of the inclusionary homes as seen from traveling Carmel Valley Road. These photographs are included as exhibits in the Section 6, Errata, of this document. Twenty-foot high orange-topped poles were erected demarcating the four corners of the inclusionary housing cluster. Under present conditions and post project conditions, the northwestern and northeastern poles are obscured by trees.

A car traveling eastbound begins to see the orange-topped pole, representing the southwest corner of the inclusionary housing cluster at a location of approximately 130 yards west of Brookdale Drive. At about 70 yards west of Brookdale, the southwest orange-topped pole is closer into view and at the intersection of Carmel Valley Road and Brookdale Drive both the southeast and southwestern poles are visible.

Additionally, twenty-foot white poles were erected in front of the orange-topped poles that represent the location of the proposed tree screen. As depicted, when trees are planted at the location of the white poles, the inclusionary housing cluster will be obscured from view from Carmel Valley Road.

Moreover, a vehicle traveling from westbound Carmel Valley Road would not view the inclusionary housing since there is a twenty to thirty foot high bluff that obscures views at this location.

It is noted that the project as proposed will result in limited views of the inclusionary housing; however, given the brief and limited views as well as the project features, such as the tree screen and existing physical obstacles that obscure views into the project site, the limited views are not considered to be a significant aesthetic impact. Nevertheless, the applicant proposed other sites and alternatives for inclusionary housing that the decisionmakers may consider and elect that further address concerns raised by the public. Please see Section 6 of the Recirculated DREIR (February 2006).

The noise impact analysis evaluated noise impacts in relation to the implementation of the proposed project under the existing conditions where there is no tree screen, and assumes a worst-case scenario. As a result of the conservative noise analysis, it was determined that to reduce noise impacts, a five foot high glass or transparent plastic barrier be used to shield any southern facing decks and/or balconies associated with the inclusionary housing units. As is illustrated by the additional viewshed analysis, the tree screen will obscure views of the inclusionary housing units from Carmel Valley

Road. As a result of this tree screen, lights emanating from vehicles traveling along Carmel Valley Road will not result in glare impacts as a result of transparent barrier shields.

MR-15: Growth Inducement

The Recirculated Draft REIR concludes that the project will not induce growth, remove an obstacle to growth (other than the project itself) or set a precedent that will encourage growth. (Recirculated Draft REIR, pp. 7-2 to 7-4.) Some comments challenge this conclusion and support the contrary conclusion that approval of the proposed project would set a precedent that would encourage growth because it would encourage other landowners with overlying groundwater rights within the County's land use jurisdiction to subdivide their properties and rely on groundwater as a source of water for the subdivision, part of which may overlie other groundwater basins. No comment identifies any specific properties on which it is reasonably foreseeable that a water use plan might attempt to rely on overlying rights on a portion of the property, or any analogous circumstances.

As noted in the Recirculated Draft REIR, in *Save Our Peninsula Committee v. Monterey County Bd. of Supervisors*, the appellate court directed that a Revised EIR should discuss two issues:

(1) whether approving water use based on pumping reductions on another parcel would result in potential cumulative growth-inducing impacts; and (2) whether the exercise of a riparian right underlying one portion of the property used to form a private mutual water company that will provide water to the entire subdivision right create a precedent for other subdivisions and thus result in a growth-inducing impact? As to the first question, off-site pumping reductions are no longer part of the proposed project.

The Recirculated Draft REIR answers the second question in the negative at pp. 7-2 to 7-4. As explained in the Recirculated Draft REIR, the County is not adopting a "policy" or taking action that would set "precedent" for any other subdivision of property. The County has confirmed that the applicant owns the property and that the groundwater is percolating; consequently, the applicant has the legal right to exercise an overlying right. Moreover, the law of the State of California already provides that groundwater may be used on parcels that do not physically overlie a basin; this type of right is called a "groundwater appropriative right" and is defined by use alone.

In the CEQA context projects may be considered to set "precedential policy" when the projects involve changing the policies or plans of the lead agency (here, the County) in a manner that would make it reasonably foreseeable that the changes would serve as the causal impetus for approval of other projects (here, development of other parcels elsewhere in the County that would rely on property-related water rights to serve newly-subdivided properties.). Here, the approval of the proposed project would not creating a new precedent with respect to water use, but would simply conform to existing law. The County is not changing any policies or plans. The applicant would not be the first, or even nearly the first, to rely on a property-based water right to serve newly-subdivided properties by means of a mutual water company. Reliance on an overlying right or a "riparian" groundwater right to serve newly-subdivided properties by means of a mutual water company is a common occurrence within the County. For example, the Canada Woods Water Company serving Canada Woods (aka Tehama), Canada Woods North, and Monterra Ranch projects provides water from groundwater wells within and outside of the CVA. Some of those wells produce water based on property-related water rights that pre-date the subdivision of property. There are many other

examples of these types of water use plans across the County, which include but are not limited to: Bordonaro (PLN030613) approved 2/2005; Borzini (PLN000449) approved 9/2003; Coelho (PLN010252) approved 1/2005; Danbom (PLN00036) approved 11/2004; Ng (PLN990181), approved 5/2004; Trompeter/Dedini (PLN030551) approved 5/2005; Liggett (PLN030040), approved 12/2005; Kaminske (MS96006) approved 3/2003.

It is noted that within the Carmel Valley, the September Ranch property is uniquely situated; the County is not aware that there is any other aquifer that has the same characteristics regarding relatively impermeable and confined area of collocation and separate sources of recharge.

Although the facts identified above are sufficient to establish lack of growth inducement, for clarity it is noted that there is a lack of causal connection between the proposed project and the alleged "precedential" impact. Such causal connection as is required by CEQA. Here, specifically, there is no causal connection between allowing one property owner to do what he or she is already allowed to do under the law, and the expectations that other property owners might also exercise legal rights that they already possess. For example, an approval of this project would not create a growth-inducing precedent by requiring the proposed project dedicate land to open space, simply because other property owners might decide that since the County allowed open space dedications for this project, the County would be more likely to allow it for their own projects. Property owners are legally entitled to dedicate land to open space both before and after, and with and without. The September Ranch project, and the County's willingness to consider open-space dedications to mitigate the impacts of any given development does not translate into a precedent-setting policy with respect to other developments. Each development should and would be considered on an individual basis.

Some comments challenge that the Recirculated Draft REIR discussion of growth-inducement is "pure argument". As stated in the Recirculated Draft REIR, the County has reviewed the factual record and has determined that what is being proposed is already a common occurrence with the County. The County has not identified, nor has any comment identified any project that might foreseeably rely on the proposed project as a precedent for approval of a water use plan involving overlying rights or riparian rights to groundwater. Moreover, the County has determined that as a factual matter, the exercise of groundwater rights pursuant to the proposed project is a reasonable use of water and will not have significant impacts under CEQA. A factual negative is not the same as pure argument. Since the Recirculated Draft REIR was released, the County has also reviewed comments on this issue, and likewise no comments have identified any reasonably foreseeable projects that might rely on approval of the proposed project as a precedent for approval of their own water use plans. Likewise, no comment has demonstrated that approval of the proposed project would preclude a fact-specific consideration of the reasonableness and impacts of water use proposed in any other projects. Consequently, under the specific facts attending this proposed project, there is no evidence that would support a County restriction on the exercise of a pre-existing property right in water by the project proponent.

Finally, the question of whether a particular approval would set a new legal "precedent" or constitute a "policy" is a mixed question of law and fact, and the Recirculated Draft REIR and the Final EIR appropriately address both.

Some commentors suggest that the Recirculated Draft REIR fails to acknowledge that the County has discretionary authority to approve or disapprove development projects based on the project's potential

impact to the environment. This is incorrect. The entire focus of the Recirculated Draft REIR is to quantitatively evaluate potential impacts to the environment, and the County will assess whether to approve the proposed project based, in part, on the analysis and conclusions in the Recirculated Draft REIR.

Some comments suggest that while they agree with the Recirculated Draft REIR that the County has no authority to approve or disapprove the existence of an overlying or riparian right, they emphasize that the County does have the authority to analyze the reasonableness of use, and to condition that use so that it is reasonable. The comments are correct; the County has the authority to analyze the reasonableness of the use, and to condition to the use so that it is reasonable and, accordingly, the Recirculated Draft REIR analysis analyzes reasonableness of water use and conditions water use.

It is important to note that to be lawful, the exercise of discretion must be reasonable, and there must be a nexus between the facts found and the conclusions made. Here, after a thorough investigation, the Recirculated DEIR concludes that there are no significant impacts associated with water use. The project does not propose to use an excess amount of water relative to uses, and there is no indication that water will be wasted. Nonetheless, the project is conditioned to limit the total amount of water that can be used. See MR-17: Water Demands. This exceeds CEQA requirements and reflects the County's exercise of its land use approval discretion.

MR-16: Staff Recommended Alternative

CEQA does not require identification of a preferred alternative. However, the procedures of the County of Monterey Planning and Building Inspection Department include recommendation to advisory and decision-making bodies regarding a staff preferred alternative. Planning and Building reviewed the proposed project, the proposed project alternatives and the potential range of impacts as presented in the Recirculated Draft REIR and determined that due to the reduced biological resource impacts and the opportunity for additional affordable housing, the staff preferred alternative is the 73/22 Alternative as described below. As required by CEQA, the Recirculated Draft REIR presents detailed analysis and mitigation measures in connection with the proposed project. In this regard it is important to note that, the proposed project and all alternatives remain available for consideration and potential approval by the decision-making body for the project, the Monterey County Board of Supervisors.

Under the 73/22 Alternative presented in the Recirculated Draft REIR, the project would consist of a combined development permit consisting of 1) a revised Preliminary Project Review Map and Vesting Tentative Map for the subdivision of 891 acres into 73 market-rate residential lots and 22 inclusionary housing lots for a total of 95 residential lots; a 20.2 acre equestrian facility and accessory structures related to that use (Lot 101); 536.4 acres of common open space (Parcels A, C & D); 273.6 acres of private open space (scenic easement) on each lot outside of the building envelope; 6.9 acres of open space reserved for future public facilities (Parcel B); annexation to the Carmel Area Wastewater District for public sewage disposal; 2) a Use Permit for the public/commercial use of the equestrian center and stables for a maximum of 50 horses and a maximum water use of 3.0 acre-feet per year; 3) a Use Permit for an on-site water system including new wells, backup well(s), booster pumps, water tanks and piping for fire suppression and residents of the subdivision; 4) a Use Permit for the removal of 768 protected coast live oaks; 5) an Administrative Permit for up to 100,000 cubic yards of grading in an "S" (Site Plan Review) Overlay Zoning District for subdivision infrastructure

and improvements including, but not limited to, development of roads, water tanks, water system, and drainage detention areas; 6) a Use Permit for an exception to General Plan Policy 26.1.10 to allow development on slopes greater than 30 percent for subdivision infrastructure and improvements; and 7) an Administrative Permit for inclusionary housing, equestrian center caretaker unit /public office, a tract sales office and security gatehouse.

Please see page 6-44 of the Recirculated Draft REIR for a discussion of the potential impacts of the 73/22 Alternative.

MR-17: Water Demands

For purposes of environmental review of the proposed September Ranch project, the County evaluated water demand information provided by the Monterey Peninsula Water Management District ("Water Management District," "District" or "MPWMD") for two existing subdivisions, Monterra and Pasadera, within the District's service area.. These two subdivisions were selected for evaluation based on the recommendation of the Water Management District and due to the lack of actual, reliable water use data for other developments within the District.

As outlined below, the demand information for these subdivisions is consistent with the projected demand for the proposed September Ranch project as presented in the Draft Revised Environmental Impact Report for September Ranch (Dec. 2004) and the Recirculated Portion of the Draft Revised Environmental Impact Report for September Ranch (Feb. 2006) ("Recirculated Draft REIR"). The information does not implicate any new impacts, much less significant impacts, not already described in the Recirculated Draft REIR.

The Recirculated Draft REIR concludes impact of project water demand on the resources of water availability/supply, the health of local groundwater basins, and water-related biological resources is less than significant. Consequently, CEQA does not require imposition of mitigation measures for these resource areas. However, the County may impose conditions of approval to provide additional environmental protection and controls under its police power, to respond to public concerns and to account for uncertainty. Accordingly, to accommodate public concern and to provide additional environmental protection, if the project is approved the County intends to impose an overall water use limit as a condition of approval to ensure the project would stay within the demand figure analyzed in the Recirculated Draft REIR. This condition may be incorporated into the CEQA mitigation measures to ensure accurate public understanding of the project's water use parameters.

The following table presents water demand data for subdivisions as identified in the 1998 Final EIR:

Reference	Water Demand for Market Rate Units	Water Demand for Inclusionary Housing
Canada Woods Final EIR - 1993	0.379 AFY	0.167 AFY
Carmel Valley Master Plan EIR	0.416 AFY	0.169 AFY
Spanish Bay Resort EIR	0.28 AFY	0.16 AFY
Quail Meadows Subdivision EIR	0.414 AFY	N/A

Reference	Water Demand for Market Rate Units	Water Demand for Inclusionary Housing
Rancho San Carlos EIR	0.75 AFY	0.169 AFY

For purposes of the Recirculated Draft REIR and Final EIR, the County received updated demand data from the MPWMD, including actual consumption figures where available. The following section discusses the water use experiences at these two developments. The next section then discusses the water demand of the project including considerations related to water treatment, and conditions/mitigation measures proposed to control water demand at September Ranch.

MONTERRA

The following information is taken from the Annual Water Monitoring Program Report for Water Year 2005 (October 1, 2004 – September 30, 2005) for Canada Woods Water Company (including the former Monterra Ranch Mutual Water Company), Monterey County California (Feb. 15, 2006) ("Monitoring Report"), and other records provided by the Water Management District. The Monitoring Report is available in the September Ranch files at the County of Monterey, and from the Water Management District. Cal-Am Water Company does not provide the District with actual water consumption data by individual Cal-Am customer.

Market Rate Homes

Table 15 of the Monitoring Report demonstrates that over the last six years, the average annual water use within Monterra has been approximately 0.586 acre-feet per year ("AFY"), with water use starting low at 0.46 afy and 0.40 afy, increasing to 0.60 afy and 0.78 afy, and then steadily declining from 0.78 afy to 0.70 afy to 0.58 afy in WY 2005. The Monitoring Report demonstrates that average water use for market rate homes declined by about 17 percent in WY 2005 as compared with WY 2004. The drop in water use after 2004 is attributed to the startup of billing for water which began on June 1, 2005.

Inclusionary Housing

There was also an approximate 10 percent drop in water use rates for inclusionary housing in WY 2005 as compared to WY 2004. Table 16 of the Monitoring Report demonstrates that the average annual water use over the past eight years has ranged from 0.18 to 0.34, starting low at 0.18 afy (truncated reporting) and 0.23 afy and gradually increasing to a high of 0.34 in WY 2003 and WY 2004, and declining again to WY 0.30 afy in WY 2005. The average annual water use over the eight-year period for inclusionary housing at Monterra was 0.284 AFY.

Monterra is at approximately 10% build-out, and it was only until recently that the Public Utilities Commission approved water rates, and water use has decreased since metered billing was initiated. Monterra water use for inclusionary housing has been shown to be down about 15% and market rate housing water use is down about 33% since water billing went into effect. The Monitoring Report also suggests that initial planting and establishment of landscaping by property owners result in temporary higher water use amounts.

PASADERA

The following information is taken from Water Management District records, available in the September Ranch project files and from the Water Management District.

Standard and Structured Lots

At Pasadera, standard lots are permitted at a use of 0.569 AFY, and the District estimates actual average use at 0.458 AFY. Structured (inclusionary) housing is permitted at 0.302 AFY, and the District estimates actual average use at 0.320 AFY. Altogether, District records demonstrate that the average use per connection at Pasadera from 1999 to 2003 = 0.399 AFY

Pasadera demand concerns have largely focused on lack of enforceable conditions limiting water use, as well as problems with construction implementation (unpermitted laterals off irrigation pipeline, lining of golf course ponds preventing recharge). The District also reports a need to improve the format and consistency of reporting. Note that Pasadera includes golf course uses (which have high water use), whereas September Ranch would not.

QUAIL MEADOWS

In compiling the Recirculated Draft REIR and Final EIR, the County also reviewed information provided for permitted water quantities at the Quail Meadows Subdivision. MPWMD indicated that actual consumption data was not available for Quail Meadows. As noted in the Table above, the Quail Meadows EIR estimated market rate lots at 0.414 AFY. MPWMD's data indicates that the permitted quantities at Quail Meadow average approximately 0.726 AFY, but that this average represents a wide fluctuation of permitting from .316 AFY to 2.152 AFY. A key distinction between the Quail Meadows subdivision and September Ranch is that Quail Meadows does not operate under an enforceable cap as would September Ranch. Water-control measures would be adopted for September Ranch in order to correct issues that have arisen with past developments such as Quail Meadows. Because the permitted numbers do not reflect actual consumption data, and because Quail Meadows consumption is not controlled by limiting conditions of approval or mitigation measures, the County believes the permitted quantities have limited relevance to predicting demand at other subdivisions. To the extent the permitted quantities are relevant, because the lowest quantity is 0.316 AFY, the quantities demonstrate that it is reasonable to expect that market rate homes *can* build-out at a demand of 0.5 AFY or less, particularly where enforceable controls are adopted as proposed for September Ranch.

SEPTEMBER RANCH WATER DEMAND

Residential Uses & System Losses. The September Ranch project, as proposed, would include 94 market rate homes at 0.5 AFY (including landscaping, auxiliary units, and other uses) (0.5 AFY x 94 = 47 AFY) and 15 inclusionary housing units at 0.231 AFY (including landscaping) (0.231 x 15 = 3.47 AFY). The total residential use is 50.47 AFY, plus the baseline equestrian center use of 3 AFY. The Recirculated Draft REIR significance analysis would not be affected by small increases in these numbers; however, as discussed below, the County intends to impose a water use cap of 57.21 AFY on the project.

Service of water to the proposed project would also include two other types of water use: treatment losses and system losses. System loss is estimated at 7% consistent with the experience of County environmental health department. The amount of treatment loss depends on the treatment technology selected for the project. The maximum treatment loss is estimated at 15% of water use for one-stage reverse osmosis (RO) treatment, which was originally proposed by Questa Engineering. (Questa, 2006; see also Technical Memorandum No. 9 ("TM 9") attached as Appendix A.) Other potential treatment technologies include multi-stage RO and pellet softening. Each option has technological and cost considerations, discussed below.

Pellet Softening. Pellet softening processes are commonly used in European, Florida, and mid-Western U.S. water treatment projects, and have been pilot tested and evaluated in California at Soquel, Hollister, Cambria, Santa Paula, Oxnard, Valencia and other locations. Pellet softening targets the removal of calcium and bicarbonate by precipitation to produce a calcium-carbonate solid particle which forms a hard crystal upon a small sand grain. This provides concentrated dry granules of calcite which can be usually beneficially used to reduce soil alkalinity. Lime pellet softening is estimated to reduce TDS from 992 mg/l to about 480 mg/l and total hardness from 512 mg/l CaCO3 to about 215 mg/l CACO3. The iron and manganese in the water would be oxidized by aeration stripping and would be co-precipitated onto the calcite pellets, almost totally removing these constituents. Elevated PH would be likely to substantially reduce viable total coliform, which can further be destroyed by chlorination prior to filtration.

The capital cost of pellet softening-filtration is anticipated to be less than half the cost of an RO membrane system; and power, energy, and chemical costs of less than a quarter of RO costs. The largest savings would be in solids residue disposal costs as compared to brine.

As compared to RO reject stream of 9,000 gallons per day, reject stream of pellet softening filtration is less than 200 gpd. (.022 percent)

Multi-Stage RO. Under multi-stage RO, brine from the first stage is pumped to and treated by a second stage and in some cases a third stage. Reject water losses differ with RO stages. First stage RO has a 15% loss, second stage RO has a 10% loss, third stage RO with softening has a 5% loss, and third stage RO with crystallization has a 1% loss. Multi-stage RO would result in a 90% reduction in brine haul costs, however, there would be considerably greater capital and O&M costs.

Nanofiltration. Nanofiltration is an alternative membrane process used to remove 60-80% of hardness and as a result a substantial reduction of TDS, although treated water would be approximate 15 mg/l above CAWD's requirements. The overall water recovery would be about 90% for a one-stage process, and 97% for a two-stage process.

The County's Environmental Health Division reviewed the treatment alternatives during consideration of the Recirculated Draft EIR and has indicated that they would apply the following performance standards in approving a treatment method for the proposed September Ranch project:

- Indicia of treatment success (*e.g.*, successful application in similar community treatment facilities) to ensure protection of public health within relevant treatment standards;
- the method must be technologically feasible;
- the method must be economically feasible; and

- reject water quantity should be as low as possible in light of the above factors, within the range of 0% to 15%.

It is recognized that if treatment losses are as high as 15% it is possible that given the configuration of the proposed project, it is possible that demand at build-out theoretically could exceed 57.21 AFY. To address this issue, the County is proposing to impose a condition that would limit water use by the project to 57.21 AFY, and that would preclude additional units from being built once the water cap is triggered. Development would be phased appropriately to ensure build-out of inclusionary units.

WATER DEMAND CONCLUSIONS

As demonstrated by the Monterra and Pasadera discussions above, the September Ranch estimates of 0.5 AFY (market rate)/0.231 AFY (inclusionary) are well within the range of water use estimated and/or documented at the Monterra (0.586 AFY (and declining)/0.284 AFY (and declining) and Pasadera (0.458 AFY/0.320 AFY) subdivisions. The Monterra experience demonstrates that water use declines over time, and the decline is sharper when billing is initiated. The demand figures for the proposed project would decrease if an alternative is approved that includes fewer housing units or a different mix of housing units.

During the course of build-out of the September Ranch lots, it is anticipated that water use averages would fluctuate as homes are being built. Water use would also fluctuate in response to the different water demands for the individual homes, as well as other factors such as the implementation of water rates and/or initial planting and final establishment of landscaping. In this regard, studies demonstrate that drought-tolerant landscaping will use more water in the first few years to establish a sufficient root system and then where water is limited will survive on less water over time.

The lot owners would be building their own homes, and therefore the house sizes would vary; moreover, water use for landscaping would depend upon individual landscape plans. Thus it would be infeasible to assign a water use for each individual lot. However, an enforceable condition of approval that limits overall water use from the SRA to 57.21 AFY would ensure that the project does not exceed the total water allotment. Water Management District staff have indicated that having a condition of approval which limited overall water use on the project site would address the District's comments regarding water demand at September Ranch.

MR-18: Hydrology and Water Availability

This master response is prepared to address comments regarding hydrology and water supply in the Draft REIR dated December 2004 and the Recirculated Portion of the Draft REIR dated February 2006 ("Recirculated Draft REIR"). Clarifications presented herein are intended to address specific issues regarding potential impacts and the significance of those impacts on the baseline state of the Carmel Valley Aquifer (CVA) and on existing groundwater users in the CVA.

These discussions are intended to further clarify the analyses presented in the Recirculated Draft REIR of the following topics by referencing existing technical memoranda on impacts to the Carmel River (TM-5), cumulative impacts in a Project scenario (TM-6), and impacts to existing pumpers in the CVA (TM-7). The following responses are organized into four hydrology master response

(HMR-1 to HMR-4) issue topics and are intended to facilitate ease of reference in response to specific comments.

For purposes of the CEQA impacts analysis, because the Recirculated Draft REIR and Final EIR analyses conservatively assume a maximum impact equivalent to the actual project demand of 57.21 AFY (or, even more conservatively, approximately 71.5 AF total during an 19-month period in the context of extended drought periods of five years or more consistent with the historical record), the degree of connectedness between the CVA and SRA ultimately has little if any effect on the impacts analysis. The conclusion of limited connectedness results in the conclusion that the maximum potential impact is a conservative assumption that is not likely to occur except in very specific (and likely infrequent) hydrologic conditions, but because maximum impact is assumed, there would be no change in the impact analysis even if the conclusion regarding the degree of connectedness was assumed to be incorrect. In this regard, however, for the reasons presented in the Recirculated Draft REIR and outlined again below, KJC continues to believe that the most supportable conclusion is one of limited connectivity between the CVA and SRA.

HMR-1 - GROUNDWATER RECHARGE IN THE SRA

Water supply in and in the vicinity of the proposed September Ranch Subdivision, regardless of whether the supply is pumped from groundwater or diverted from surface water, is entirely dependent on precipitation and its percolation into available groundwater storage. More importantly, it is the efficiency of a watershed in its ability to replenish groundwater storage (also known as "recharge") that creates sustainability for existing uses of water and growth in consumptive use of water.

Drainage within the September Ranch watershed is fairly efficient because of the well-defined (high relief) ridges that influence the convergence/drainage pattern within the watershed. Generally, surface water flows relatively unimpeded to the terrace deposit lying adjacent to the base of the ridges. Efficient drainage means groundwater recharge in the SRA is also fairly consistent in that the basin quickly refills itself annually under both normal rainfall years, and during and after prolonged drought periods. Recharge is estimated by subtracting surface runoff and evapotranspiration (ET-loss) from precipitation on a monthly basis. Since the September Ranch watershed is a fairly closed hydrologic basin as defined by topography, surface runoff to adjacent watersheds is virtually nonexistent; hence, all runoff minus ET-losses are then available for recharge through infiltration and percolation into groundwater.

The Recirculated Draft REIR quantitatively evaluated recharge in the SRA by using rainfall data recorded at the San Clemente Dam with a 15.1% reduction factor for the SR area from water years 1996 and 1997 for normal rainfall years and 1987 to 1991 as critically dry water years. Of less importance than recharge in assessing sustainable use of water is aquifer storage. Insufficient groundwater data (water levels) prior to 1996 prevents representative analysis of SRA storage based data from the critically dry years of 1987 to 1991.

WY 1996 and 1997 were used to calculate recharge and drawdown in the Recirculated Draft REIR (Table 4.3.3). Although this original analysis was accurate, to address the District's concerns, additional estimates using WY 2000 and WY 2001 as normal rainfall recharge years have been calculated for the response to comments in the Final EIR. These alternative analyses result in recharge values of 228.5 to 235.9 AFY. These values reflect a smaller amount of groundwater (than

the 1996 and 1997 estimates) available for exchange between the SRA and CVA (under project condition) of 171 AFY to 178 AFY.

Since storage capacity of 305 AF exceeds recharge of 228.5 to 235.9 AF in normal rainfall periods and 73 to 151 AF in critically dry years, it is recharge that determines the viability of yearly sustained usage of groundwater, and not storage. Based on this fact, the Recirculated Draft REIR demonstrated that water is available to fulfill the project demand of 57.21 AFY which is 24 percent of annual recharge in a normal rainfall year and between 37 to 78 percent in dry years. A reality check is that although due to judicial direction current water use on the property (99 AFY) is not used as the CEQA baseline, the fact is that water in excess of the project demand has been pumped at the project site for approximately 9 years.

HMR-2 - WATER BALANCE

The Draft REIR was updated with a brief statement in the Recirculated document Page 4.3-42 that ". . . all (recharged) groundwater not consumed or stored in the SRA would normally benefit the CVA. . ." The Recirculated Draft REIR essentially agrees with a comment by the Monterey Peninsula Water Management District ("District") proposing the concept that groundwater in the SRA is shared with the CVA mainly in the collocated portions of the two aquifers, as illustrated in Figure 4.3-3, where cross-section M-M' characterizes the depth to bedrock of these aquifers. KJC agrees with the District's comment that since there is effectively no surface runoff, then recharged groundwater in excess of storage and usage must benefit the CVA AQ3.

To address the District's comments, additional estimates of recharge using WY 2000 and WY 2001 as normal rainfall recharge years have been calculated. The Final EIR includes for informational purposes both the original analysis, which remains valid, and the additional analysis of the use of normal rainfall WY 2000 and 2001, resulting in recharge values of 228 to 235 AF per year. Comparatively, these values decrease the amount of groundwater available for exchange between the SRA and CVA (under project condition) to 171 to 178 AFY (0.08% and 0.13% change from the recharge estimates of 187 and 205 AFY presented in the Recirculated Draft REIR). Responses to comments estimate recharge based on WY 2001 of 178 AFY.

Although there is established hydraulic connectivity – *i.e.* shared groundwater – between the two aquifers under certain hydrologic conditions, it is not possible to demonstrate the rate of exchange of groundwater due to uncertainty in the transmissiveness (*i.e.*, the rate) of groundwater flow in the older alluvium Qoa_2 and specifically in the collocated portions of the aquifers. Groundwater flow is generally slow in the SRA as indicated by the groundwater gradient of 0.0025 ft/ft averaged throughout the basin. The slow movement of groundwater is primarily the result of a relatively closed basin with limited subsurface outflow to downgradient ground waters such as AQ3. Thus, that area of the two aquifers connected by the older alluvium Qoa_2 is described in the Recirculated Draft REIR as "effectively" an aquitard or groundwater barrier, although it does not form a complete barrier. The District's proposed concept of a more transmissive Qoa_2 water bearing alluvium is conceivable, which would allow more exchange of excess recharge to flow across M-M', but this concept is currently not supported by data. The best conclusion is that Qoa_2 is best characterized as a low transmissive unit, based on ample data collected in the 1997 aquifer test and the laboratory analysis from boring C-7 (described in the Recirculated Draft REIR). KJC has evaluated, in detail, both sets of data, and the following discussion is intended to clarify the use of these data in the

Recirculated Draft REIR in support of our conclusion that there is limited hydraulic connectivity between the CVA and SRA.

Laboratory Analysis of Hydraulic Conductivity

In 1996, Todd Engineers conducted supplemental laboratory analysis of selected core samples from boring C-7 (Memorandum dated 14 March 1997). Daniel B. Stephens & Associates (Albuquerque, NM) reported results from permeameter tests for the following samples:

- A silty sand of Qoa_1 with laboratory tested conductivity of 28.0 gpd/ft^2,
- A clayey silt of Qoa_2, with laboratory tested conductivity of 0.14 gpd/ft^2, and
- A siltstone of Monterey Formation, with laboratory tested conductivity of 7.8E^{-5} gpd/ft^2.

The District commented that results of three samples from a single soil core can be suspect and that the 0.14 gpd/ft^2 value is anomalously low compared with estimates from samples from nearby investigations. The principle is acknowledged, and because of this uncertainty, the Darcy flux method of calculating groundwater exchange between the two systems has been deemed unreliable. Moreover, because of this uncertainty, KJC has accepted the conservative and reasonable assumption that under the baseline condition (3 AFY) between 225.5 (WY2000) and 232.9 AFY (WY2001) of groundwater are available for exchange between the SRA and CVA and that in extended drought periods the available exchange decreases to 62 and 79 AFY (WY1987 to 2001 and conservative ET-loss of 85%). KJC also acknowledges the District's comment that under the project condition of 57.21 AFY usage there may be an additional 54.21 AFY on top of the 3 AFY baseline amount less groundwater available to recharge AQ3; although KJC believes that this impact is likely to occur only under specific hydrologic conditions, the impact analysis provided assumes a worst case scenario impact of 54.21 AFY plus the 3 AFY baseline (i.e. 57.21 AFY). However, as explained above, the 0.14 gpd/ft^2 value is useful because it is actual data from Qoa_2, and KJC concludes that this actual data is, albeit limited, somewhat more persuasive than the competing data identified in the District's comment which is from a different site altogether. In light of the limited and uncertain state of the data, KJC recommends that further speculation regarding the actual numerical value of transmissivity for the alluvium specifically Qoa_2 is of little value. Instead, KJC believes that the best approach is to focus on the 1996/1997 aquifer pumping test and distill evidence of a barrier by examining flow patterns.

The low transmissivity of the Qoa_2 water bearing zone, which implicates a limited hydraulic connectivity between the SRA and the CVA, is supported by aquifer test results from 1996/1997 conducted within the SRA. In the test, 47 days of 270 gpm pumping in Well SR-1 abruptly created a groundwater flow divide. KJC has closely examined the 1996/1997 aquifer test in the September Ranch groundwater basin, and agrees with the comments by the District 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. Notably, KJC's analysis of the pumping test data is based on comparing the relative change in groundwater flow patterns - and not the amount of response (water level fluctuations) in each well - as the test progressed from pretest water levels (in response to pumping) to groundwater flow patterns (contours) at the end of the 47-day test. It is agreed that the absolute drawdown of water levels in both aquifers might have been less than expected, and hence less emphasis was placed in examining drawdown data in each well in the interpretation.

Three sets of interpreted groundwater contours were examined; A) Pre-testing water levels measured on 11/21/1996, B) Day 4 of pumping test with water levels measured on 12/2/1996; and C) Day 38 and beyond with water levels measured starting on 1/3/1997.

Pre-test - Interpreted groundwater contours from pre-test data indicate groundwater flow as sub-parallel to each other in the SRA and CVA, starting from the east ends of aquifers at Well A and Well 5, respectively near Brookdale Drive. The parallel flow of groundwater is separated by the Monterey shale bedrock outcrop; the bedrock high is subterranean starting at the Ask and Stein wells where it is overlain by the older (Qoa_2) and less permeable alluvium and that in turn is covered by the younger and more water bearing alluvium (Qoa_1). Groundwater flow within both aquifers continues to be parallel, implying minimal exchange in flow between the two systems in these locations. Groundwater from the two aquifers then converges in the CVA in the areas of Well E and the Brookdale well.

Day 4 - Interpreted groundwater contours from Day 4 of test indicate groundwater in the CVA will flow towards the extraction Well SR1 and Well-C almost in a reversed gradient pattern in the areas of Wells 8, 9, and 10. Groundwater in the CVA flowing towards the extraction well is expected in this area because of the existence of the younger alluvium and that groundwater is closer to the extraction well. Groundwater in the CVA flows away from the pumping well west of Well 9 and the Romer Well; whereas, groundwater in the SRA in this area continues to flow towards Well C; hence, groundwater in the SRA in this area is still under the influence of the pumping well. This apparent divergence of flow means that while there is exchange in groundwater between the two systems, a groundwater divide developed in the pumping test data which can be attributed to the limited hydraulic communication between the two systems in this area largely due to the less permeable older alluvium (50 feet thick) beneath the younger more permeable alluvium but with a much lesser thickness of 20 feet wherein groundwater flow mostly occurs.

Day 38 - Similar groundwater patterns are apparent in the Day 38 (1/3/97) of the pumping test with a flat gradient maintained in the area west of Well 9 – at about 43 feet MSL. The flat gradient is an attribute of limited groundwater movement between the two aquifers. Groundwater contours for 2/15/97 and 2/28/97 show a clear divergence of groundwater flow (divide) Wells 9 and D where groundwater flows away (westerly) from the SRA in the CVA while flow is still towards the pumping well in the SRA.

Based on the relative change in groundwater flow during the 47 days pumping test, it is concluded that data shows a sustained divergence of groundwater flow between the two systems which is attributed to a groundwater divide. Under lesser (normal) pumping conditions, the groundwater in the two aquifers flows in sub-parallel directions toward the northwest. The two systems are separated by the less permeable shaley bedrock and overlying clayey-silt older alluvium, and are semi-isolated. They have separate sources of groundwater recharge.

Comparison of the Two Data Sets and Conclusions Drawn

KJC emphasizes that its conclusion regarding the groundwater flow divide is factual, based on the distinctive changes in groundwater flow patterns induced by pumping at the SR-1 well. KJC dos not recommend the use of an aggregate transmissivity or hydraulic conductive of about 990 gpm/ft^2 for

the whole of the alluvium (Qoa_1 and Qoa_2) to estimate groundwater outflow to the CVA. Even though the screen interval of SR-1 is screened in the Qoa_2 and Monterey Formation, no specific Qoa_2 and Monterey Formation transmissivities can be derived from the test. Acknowledging the conductivity values derived from the laboratory permeameter test are less reliable from just a single soil core and that the Qoa_2 value could be characterized as anomalously low, the results none-the-less provide a measure of the relative difference between the three types of aquifer properties, silty-sand, clay, and siltstone. Under all of the circumstances, the best conclusion is that the Qoa_2 is less permeable than the overlying alluvium and, although larger in volume, groundwater stored in Qoa_2 is less available because of the low transmissivity.

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). The REIR has independently calculated groundwater gradient for normal rainfall periods of 0.0014 to 0.006 and for extended dry periods of 0.0016 to 0.017, showing a slightly steeper gradient during drought years. These are fairly gentle to practically neutral gradients which suggest low flow to equilibrium groundwater conditions between the SRA and CVA systems.

The hydrogeologic limitations are a function of the underlying geology which includes the younger alluvium Qoa_1 of approximately 20 feet thickness which is more permeable by approximately 2 to 3 orders of magnitude than the underlying older alluvium Qoa_2.

The groundwater exchange occurs largely in an area above the deeper bedrock where the alluvium (Qoa_1 and Qoa_2) is the thickest (Figure 4.3-4b in the Recirculated Draft REIR). Within that alluvium, the majority of the groundwater exchange, were it to occur, occurs in younger alluvium Qoa_1 because of the significantly higher permeability of Qoa_1 than that of the older alluvium Qoa_2. During average and above average rainfall years, the groundwater exchange occurs in Qoa_1. Dryer years can coincide, seasonally, with much larger groundwater gradients between the SRA and the CVA. In dryer years, when water levels drop below the Qoa_1, flow can occur only in Qoa_2 which is also limited.

HMR-3 SIGNIFICANCE OF IMPACT ON THE CVA AND CARMEL RIVER IN TERMS OF FISHERIES

The Recirculated Draft REIR concludes that recharge into the SRA exceeds existing uses from the SRA plus proposed project water usage. The extra recharge is a potential rejected flow that is available to flow to the CVA (see also discussions in HMR-2). Because the project has an estimated demand of 57.21 acre feet, and because the current baseline usage of water is 3 acre feet, the maximum annual impact on the Carmel Valley Aquifer could be 54.21 acre feet. The District commented that a worst case impact on the Carmel Valley Aquifer would be approximately 270 AF of reduced flow over a five year prolonged drought period. This impact is not believed to be likely because, as described below, the historical record demonstrates that the CVA efficiently recharges even during a prolonged drought period.

Less Than Significant Impact to the CVA

In addition to limited hydrogeologic connectivity between the CVA and the SRA, the small amount of flow between the two aquifers is primarily due to a practically neutral groundwater gradient that exists between the SRA and CVA under average and below average rainfall conditions. The neutral groundwater gradient is influenced by upstream reservoir releases as managed by the Monterey Peninsula Water Management District, that in turn influences the groundwater levels in the CVA. Groundwater contours in Figure 4.3-5 in the Recirculated Draft REIR demonstrate that the flow of groundwater in each aquifer is parallel to each other from southeast to northwest in the two aquifers. It is believed that parallel groundwater flow generally occurs year-round.

The reduction of 57.21 AFY of flow to the CVA is considered a less than significant impact on the CVA because of the small amount of flow between the two systems compared to the total flow in the CVA and because the aquifers have independent sources of recharge. While the CVA is fed by source waters upstream of the Carmel River, the SRA is being recharged by the watershed uplands and groundwater is stored in the terrace deposits (or alluvium). Historically, these sources of recharge have been consistently refilling both aquifers annually under both normal rainfall years and after extended drought periods (see more discussion in HMR-4).

The District commented that the SRA and CVA share the same source of recharge from the uplands of the SR watershed and that the excess recharge in the SRA is a small part of the approximately 2,600 AFY of recharge along the sidewalls of CVA AQ3. KJC agrees with this comment, but this is consistent with the conclusion that there are two sources of recharge and that only a comparatively small amount of excess recharge in the SRA is shared with the CVA as compared to subsurface recharge from AQ2.

Less Than Significant Impact to the Carmel River

In response to comments on the Recirculated Draft REIR analysis of impact level under project conditions on the Lower Carmel River and on AQ3, monthly calculations of reduced flow to the Carmel River Subunit 3 were performed to conclusively demonstrate the less than significant impact on Steelhead and other aquatic species during dry months of each year. The analyses were done for below normal rainfall (Case 1) and normal rainfall periods (Case 2).

Using the value of 8 AFY of rejected flow during a dry period as calculated as 65.6 AFY of inflow less 57.21 AFY of September Ranch pumping (WY 1987) and a more conservative normal year value of 178 AFY of rejected flow as calculated as 235.9 AFY of inflow less 57.21 AFY of September Ranch pumping (WY 2001), a monthly analysis was prepared for both dry year (WY 1987 - Case 1) and normal year (WY 2001 - Case 2). The previous normal year analysis for WY 1997 remains valid. This alternative normal year analysis is provided in response to MPWMD comments. The conclusions remain the same regardless of the normal year used.

The monthly analysis uses the September Ranch recharge estimates for the respective water years identified above found in Table 1 of the Project Specific Hydrogeologic Report whereby recharge is a positive number. The monthly water demands for September Ranch are then calculated by assuming that 75% of the 57.21 AFY demand occurs from June to October and the remaining 25% occurs from November to May whereby demands are a negative number. The Maximum Potential Spillover to the

CVA is then calculated by summing the recharge (positive) with the demand (negative). If the resultant sum (i.e. the Maximum Potential Spillover) is negative, then the Maximum Potential Spillover to CVA is assumed to be zero (as occurs when recharge is less than pumping). If the resultant sum is positive, then the resulting value for the month is entered.

The difference in Maximum Potential Spillover with and without the September Ranch project is then calculated by subtracting the "with September Ranch" calculation from the "without September Ranch" calculation. Then, the Maximum Potential Spillover in cfs for each month is converted to AF/month. The sum of the twelve AF/month calculations is not equal to the September Ranch demand because when the Maximum Potential Spillover to the CVA is negative (as occurs when recharge is less than pumping) the value is zero. The monthly variations in recharge can result in significant differences in the Maximum Potential Spillover estimate for any given month.

Maximum Potential Spill Over from SRA to CVA was then compared to the actual mean monthly flow in the Carmel River at US Geological Survey (USGS) stream flow gage No. 11143250 immediately downstream of the September Ranch development. When the gage flow = 0; it is assumed that the Carmel River is a losing stream (i.e. the water table is below the channel bottom) and therefore the reduced potential spill over from the SRA to the CVA results only in a reduced water table. The results of the revised monthly analysis are summarized in the revised Table 4.3-9 below. It should be noted that the revision to the analysis does not result in any changes to the conclusions in the Recirculated Draft REIR.

As noted above, for purposes of responding to the District's comments, the 2000 and 2001 water years were assessed. In these years, the range of potential maximum monthly reduction that can be considered potential recharge to the CVA and thence to the Carmel River remains, as with the original analysis, 0.024 to 0.033 cfs in dry years (Table 4.3-9 Draft REIR Case 1 – WY 1987). The potential maximum reduction is increased slightly 0.022 to 0.14 cfs flow in the Carmel River in normal rainfall year (Case 2 – WY 2001). In interpreting these results, it is important to remember that reduction in recharge to the Carmel River can only happen within the hydrogeologically feasible flow from the SRA to the CVA. The reduction is difficult to estimate since the gradients are fairly neutral at any given time in a year and the resulting flow is less than -0.033 cfs. In a conservative scenario, any reduction of flows from the SRA into the CVA will likely occur during summer months of peak water usage. However, during this time of year the reduced exchange from SRA to CVA will likely have limited impact on water levels in the Carmel River because there are generally no flows during the summer-early fall in the River. Flows in the River were identified based on a review of USGS stream flow gage No. 11143250 immediately downstream of the proposed September Ranch development (Downstream Gage).

In the location of the Downstream Gage, flows are typically high, sometimes in excess of 500 cfs (224,000 gpm) in the winter time and then taper to zero flow in the summer months. Zero flows can occur as early as May in a relatively dry year to as late as July in a relatively wet year. Therefore, during the wet season, the reduction of flow of up to 0.033 cfs to the CVA and potentially to the Carmel River cannot be discerned in the flow of the Carmel River because the river flows are so high. When the Carmel River is dry, the water table is below the river bottom and the reduction of flow of up to -0.033 cfs also cannot be discerned in the Carmel River because the reduction in these months

are actually in groundwater and not surface water; the flow reduction then could result in a minimal drop in groundwater level (see HMR-4).

Flow reductions to the CVA and thence to the Carmel River during the late spring months when the flows are tapering are also likely to be indiscernible in the accuracy of the gage. The maximum potential reduction in flow of 0.033 cfs in dry years ranges from 0.05% to 0.13% of the respective monthly flows in the Carmel River for the appropriate month. It is important to note that the maximum potential reduction of flow of 0.14 cfs from the SRA to the CVA in October 2001, although numerically equal to the average flow in the Carmel River during that time, the reduction is actually of groundwater. The reduction in flow from the SRA to CVA, especially in October, is likely to be occurring only in the subsurface and would not manifest as a reduction in flow in the Carmel River. During an extended drought period (e.g. 1987 to 1991) the downstream gauge registered zero flow therefore the maximum reduction of 0.14 cfs is all occurring in groundwater.

It should be noted that pumping in the CVA by many users further complicates the analysis of impact on the Carmel River. The CVA acts as a buffer zone of groundwater flow between the river and the SRA. What limited groundwater flow occurs from the SRA to the CVA then has to travel a distance of 850 feet to the Carmel River due south of the September Ranch watershed. Potential effects on the Carmel River baseflow as a result of -0.033 cfs (dry year) up to 0.140 cfs (normal year) of possible reduced groundwater resources from the SRA is conservatively presented as a 1:1 reduction by SRA usage on reduced flow to the River. However, in reality this is a fairly unlikely impact. The impact cannot be quantified with certainty because of the additional pumping in the CVA between sources and receiving waters, which as noted is a factor, which tends to reduce the potential for SRA pumping to affect the River. Also, it is expected that the reduction, if any, will occur in the subsurface and be indiscernible both in the subsurface and in the surface water. About 10,000 AF per year is currently diverted in AQ3 for consumptive use (MPWMD CVSIM data).

Lastly, it is estimated that the adjacent watersheds namely the Canada De La Segunda in the east and the Roach Canyon in the west have four to five times the drainage and recharge capacities to the CVA (Kleinfelder, 2004). The Canada De La Segunda is technically an upgradient source water of the CVA relative to the September Ranch Project. Its direct contribution to the CVA and then to the Carmel River may eclipse the minor contribution of recharge from the SRA.

Revised Table 4.3-9: Maximum Potential Spill Over of Water from SRA to CVA for Below Normal and Normal Precipitation

Case 1: Maximum Potential Spill Over of Water from SRA to CVA (cfs) for Below Normal Precipitation (WY 1987)												
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Case 1a: Below Normal Precipitation WITH September Ranch	0.00	-0.019	-0.061	-0.178	-0.359	-0.224	-0.0009	0.0000	0.0000	0.0000	0.0000	0.0000
Case 1b: Below Normal Precipitation WITHOUT September Ranch	0.00	-0.052	-0.094	-0.211	-0.392	-0.257	-0.034	-0.024	0.00	0.00	0.00	0.00
Difference (Case 1a minus Case 1b)	0.00	-0.033	-0.033	-0.033	-0.033	-0.033	-0.033	-0.024	0.00	0.00	0.00	0.00
WY 1987 Monthly Mean Flow in the Carmel River (cfs)	0	0	0	0	0	36.11	60.88	18.42	0	0	0	0
Case 2: Maximum Potential Spill Over of Water from SRA to CVA (cfs) for Normal Precipitation WY 2001												
	Oct	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**
Case 2a: Normal Precipitation WITH September Ranch	0.496	0.032	0.019	1.156	0.868	0.548	0.454	0.000	0.000	0.000	0.000	0.000
Case 2b: Normal Precipitation WITHOUT September Ranch	0.635	0.066	0.052	1.189	0.904	0.581	0.488	0.000	0.000	0.000	0.000	0.022
Difference (Case 2a minus Case 2b)	0.140	0.034	0.033	0.033	0.037	0.033	0.034	0.000	0.000	0.000	0.000	0.022
WY 2001 Monthly Mean Flow in the Carmel River (cfs)	0.14	7.08	9.71	86.07	186.50	373.29	92.00	38.19	5.73	0.00	0.00	0.00

HMR-4 - SIGNIFICANCE OF IMPACT ON EXISTING CVA GROUNDWATER USERS

The discussion presented herein is intended to respond to those requests by clarifying and providing additional analysis to support the conclusion that the CVA efficiently refills during and after drought periods. Based on groundwater elevation data provided by the Monterey County Water Resources Agency (5 February, 2004 from R. Johnson), groundwater levels immediately upstream of the SRA in the CVA AQ3 (Figure 2 TM-7, in wells 16S/1E25-B02, 16S/1E22-E01, 16S/1E22-H01, 16S/1E22-J01 [no data from 1985 on], 16S/1E23-J02, 16S/1E23-F01, and 16S/1E23-K01) do recover during the critically dry period of 1987 to 1991 to their pre-drought levels. Groundwater recoveries during this extended and critically dry period are nearly completely the same as the groundwater elevations (Figure 2) during normal rainfall years; moreover, recoveries occur consistently during the winter and spring months (February through May) in a water year.

Lessened Impact

The fact during extended dry periods that AQ3 of the CVA refills to nearly pre-drought groundwater levels supports the conclusion that water supply impact of maximum 57.21 AF of project demand on the CVA is accurately characterized as less than significant, even with the assumption of zero recharge (runoff and river during dry years) in the CVA. According to the historical record (which typically used to predict the impact of changes in hydrology), groundwater levels remained depressed for, at most, only one and a half years (from February 1987 to March 1989) in a five year critically dry period. Otherwise, water levels fully recovered to their normal levels during these dry years. Based on the recovery of groundwater water levels to their pre-drought conditions, KJC concludes that the impact of the proposed project demand on the CVA would not be substantially adverse. The aquifer efficiently recovers during an extended drought period.

Significance of impact should also account for *depleted groundwater storage* over the drought period at issue. KJC agrees with the District's comment that there was a notable depletion of perennial groundwater storage from 18,979 AF (1986) to 14,286 AF (1990) in AQ3 during the critically dry years of 1986 to 1991 (MPWMD CVSIM3). The historical average yearly water in storage in AQ3 is approximately 16,927 AFY and the high value of water in storage of 18,979 AF in 1986 was due to a particularly wet winter in 1986 which was followed by a dry summer and the beginning of the extended dry period. Even assuming the District's proposed worst case scenario of 270 AF, the average water in storage during the five year dry period is 16,745 AFY. A reduction of recharge by the Project of 270 AF, which is overly conservative as described below, then represents 1.5 percent of total water in storage over this time period in AQ3 which is considered insignificant even for reduced storage caused by prolonged below normal precipitation condition.

An alternative monthly analysis of maximum potential reduction of recharge by the Project in the SRA during the dry period from WY 1987 – WY 1991 was conducted. The analysis included:

1. Subtraction of the estimated monthly SR Pumping (totaling 57.21 AFY) from the estimated monthly recharge to SRA (from Table 1 of Project Specific Hydrogeologic Report)

2. Cumulative pumping from Oct 1986 and the beginning of WY 1987 to September of 1991 minus recharge value for each month.

The result is at the end of Sept 1991, there is 78.9 AF more water in storage in the SRA than has been pumped out (i.e. recharge exceeds pumping). There is sufficient recharge to SRA on a seasonal basis that the supply exceeds the demand over the entire dry period. Therefore, the District's proposed worst case scenario of 270 AF (57.21 AF x 5 years) of depleted groundwater storage in the SRA (and thence the impact to the CVA) is extremely conservative and highly unlikely to occur. The analysis rather supports the conclusion that the worst case impact for reduction of recharge by the project is more closely tied to the historical record of approximately 71.5 AF over a 19 month period before water levels recovered (see comparison of reduced flow and river flow in page 3-29).

Two Sources of Groundwater

The replenishment of the CVA AQ3 and hence the variations of water levels discussed above is primarily dependent on surface recharge by the Carmel River and percolating into groundwater and secondarily by subsurface inflow from the upgradient AQ2 unit. Subsurface inflow according to CVSIM information is fairly steady at 2,781 AFY; hence, groundwater level fluctuations are then primarily a response to surface recharge by the Carmel River.

CVSIM data show that the historical average yearly surface recharge is 8,000 AFY. The averaged yearly recharge between 1987 and 1991 is 7,000 AFY or 35,000 AF over five years. Recharge dropped from 7,451 AF in 1986 to 5,476 AF in 1987 followed by a slight rise of 6,176 AF of recharge in 1988. A notable rise in groundwater recharge during this critically dry period of 7,383 AF occurred in 1989 followed by a repeating low recharge of 5,396 AF in 1990. Surface recharge then again achieved a high during 1991 of 10,370 AF. The cyclical pattern of rise and fall of subsurface recharge is consistent with the groundwater level fluctuations shown in hydrographs presented in the attached Figure 2 in this response (reference Figure 2 TM-7). Groundwater responded efficiently to the combined surface and subsurface recharges in the drought period of 1987 to 1991.

Even assuming the District's worst case scenario, then, a reduction of recharge by the Project of 270 AF would represent 0.7 percent of total recharge over this time period in AQ3 which is again considered insignificant even for reduced recharge caused by low rainfall condition. Moreover, it is KJC's opinion that the groundwater exchange between the two systems in a yearly basis has been substantially less than 57.21 AFY due to a low permeability groundwater barrier. During normal precipitation years, groundwater would spill over the low permeability barrier when water levels rise above 47 feet MSL. However, during prolonged dry period, groundwater levels would be lowered during but only part of the dry period such as 1987 and 1988. As shown in Figure 1 TM-7, the closest well to SRA is 16S/1E-25B2 with a normal water level of about 43 feet MSL. This means that water levels in the SRA would have to be higher than firstly the top of Qoa_2 (about 47 feet MSL) and then higher than 43 feet MSL of the nearby CVA water levels. During dry years, water levels in both systems would drop below their normal elevations of about 43 feet MSL such as those exhibited in well 16S/1E-25B2 during 1987 and 1988. In this scenario, there would be very limited to no groundwater exchange between the two systems.

While the CVA is fed by source waters upstream of the Carmel River, the SRA is being recharged by the watershed uplands and groundwater is stored in the terrace deposits (or alluvium). Hence, groundwater flows are parallel to each other in the CVA and the SRA and at approximately equal water surface elevations resulting in near neutral groundwater gradients between the two aquifers.

Historically, these sources of recharge have been consistently refilling both aquifers annually under both normal rainfall years and after extended drought periods. Comment by the District questions the opinion of independent sources of water by stating that a small portion of recharge into the CVA along its northern sidewalls of AQ3 would still be affected by increased pumping from the SRA (MPWMD 4/7/06 comment on Appendix C, page iv, paragraph 5). KJC agrees with District that the SRA and CVA share the same source of recharge from the uplands of the SR watershed and that the excess recharge in the SRA is a small part of the approximately 2,600 AFY of recharge along the sidewalls of CVA AQ3. KJC is firm in its findings that there are two sources of recharge and that only a comparatively small amount of excess recharge in the SRA is shared with the CVA as compared to subsurface recharge from AQ2.

IMPACT ON EXISTING CVA PUMPERS

KJC agrees with the District that there would be an impact to the CVA as a result of project demand, and this impact is acknowledged in the Recirculated Draft REIR. However, this impact is accurately characterized as non-substantial to the overall sustainable yields of existing users of groundwater in the CVA in light of the fact that the two systems are separate with limited hydraulic communication and that there are two sources of groundwater recharge.

As pointed out by commentors, the analysis of the potential impact to both riparian and appropriative water rights holders in the CVA is not directly applicable to assess impacts to all of the pumpers in the CVA, AQ3. To assess the potential impacts to existing users, KJC reviewed the amount of additional drawdown in groundwater levels that would result from the proposed project use of 57.21 AF as if it were to occur in the CVA directly.

In order to evaluate potential changes to water level in the CVA, the total demand of 57.21 AF/yr was assumed to come entirely out of the CVA,-AQ3. This analysis used an area for CVA – AQ3 of 1,558 acres as estimated in a geographic information system map. Then an aquifer porosity of 33% was used and it was estimated that the change in water level over the 1,558 acres as a result of pumping 57.21 AF/yr is 0.009 in/yr, which is almost indiscernible in a well. If a more conservative approach is taken and all of the pumping were to occur in 10% of the CVA-AQ3 or 155.8 acres, then the resultant change in water level is estimated to be 0.09 in/yr or almost a tenth of an inch.

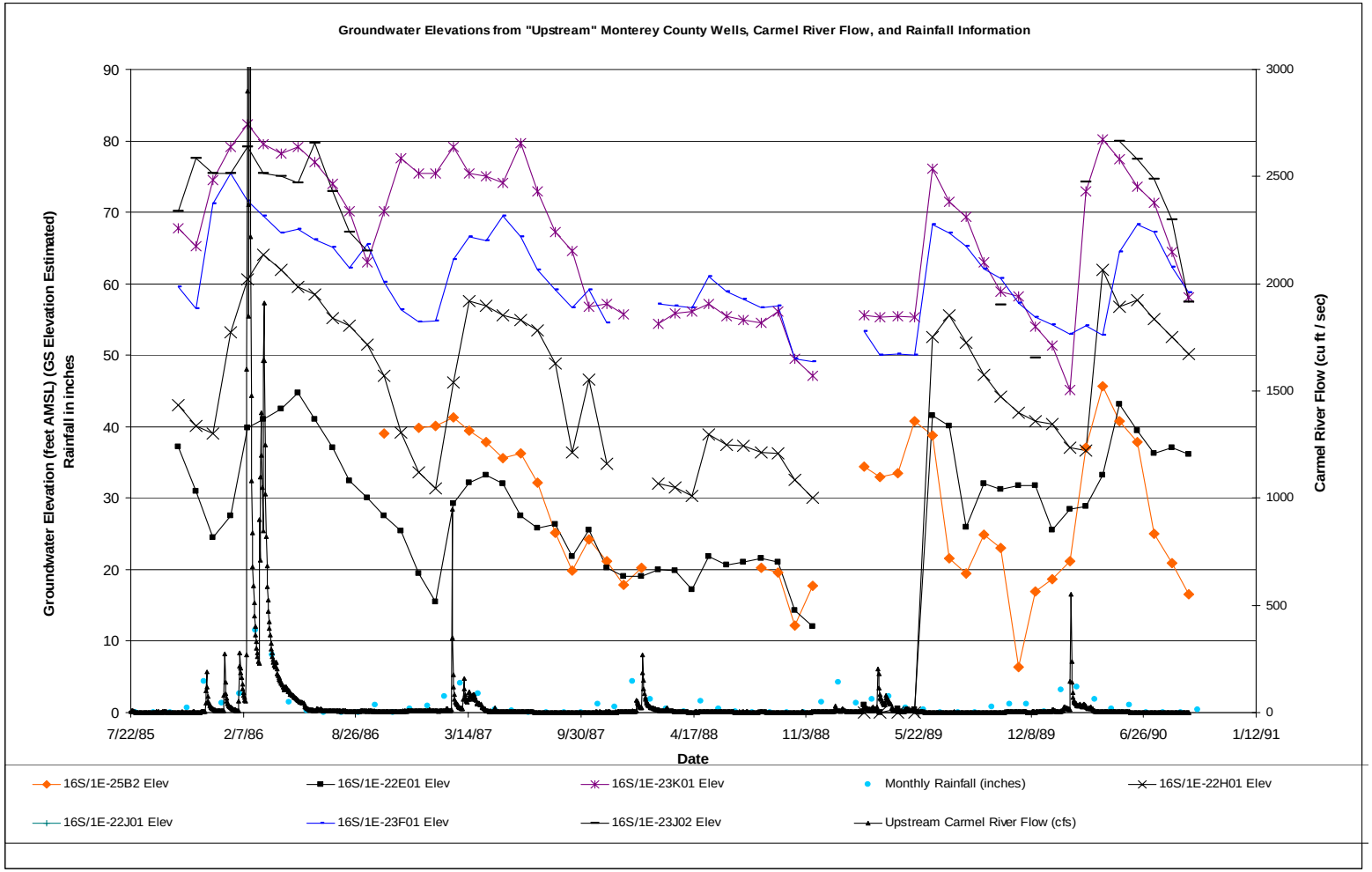
To clarify the potential for cumulative long-term impacts to existing CVA users, the analysis assumed that if water levels were to drop below the perforation intervals in existing water wells, those dry wells might require existing pumpers to drill a deeper well to extract water supply from deeper in the aquifer during critically dry periods, which would be a significant impact. For purposes of this analysis, the total demand in the CVA-AQ3 was assumed to include reasonably foreseeable developments with net water use, including remaining Quail Meadows lots as identified in comments, plus the proposed project. It is noted that since release of the Recirculated Draft REIR, the County has determined that the "Dow" development is no longer reasonably foreseeable; removing the "Dow" development and adding in the remaining Quail Meadows lots, the cumulative foreseeable demand remains the same (a little lower) than identified in the Recirculated Draft REIR. In anticipation of questions, however, the Response to Comments discussion presents an alternative assessment of cumulative demand that includes both Dow and remaining Quail Meadows lots demand, and the total for this estimated demand is 112.9 AF/yr which is assumed to come entirely out of the CVA,-AQ3. Used an area for CVA - AQ3 of 1,558 acres with an aquifer porosity of 33%, it

was estimated that the change in water level over the 1,558 acres as a result of pumping 112,9 AF/yr is 0.027 in/yr, which is barely measurable in a well. If a more conservative approach is taken and all of the pumping were to occur in 10% of the CVA-AQ3 or 155.8 acres, then the resultant change in water level is estimated to be 0.27 in/yr or slightly more than a quarter of an inch. Based on the foregoing, even over the long-term it is highly unlikely that water levels would drop below the perforation intervals of existing wells.

While a hypothetical drawdown of water levels cannot be accurately estimated because of the uncertainty in actual amount of groundwater exchange between the two systems, a comparison can be made by reviewing the calculated drawdowns in the SRA as an alternative to the above analysis. The predicted drawdowns for 57.21 AF of discharge in the SRA (as presented in the Recirculated Draft REIR for the extended dry years 1987 to 1991) are 0.96 foot in the summer and fall seasons and then water level rises in the winter season. These calculated drawdowns are based on aquifer storage of 305 AF in the SRA. Since the storage in the CVA AQ3 is about 16,929 AF which is two orders of magnitude large than that in the SRA, the corresponding lowering of groundwater levels as a result of 57.21 AF of denied recharge is than 0.013 foot in the summer and 0.006 foot in the winter which is very consistent with the above analysis of average drawdown of 0.0095 using porosity of 33% over 1158 acres of AQ3. The average well screen of water supply wells in the Carmel Valley is about 20 feet long and about 135 feet deep. The small amount of potential additional lowering of water levels would not result in water level declines in a well casing to below the pump depth and that there is no possibility of a dry well scenario. As shown in Figure 2, fluctuations in water levels are about 35 feet in normal yearly seasonal changes and between normal and dry precipitation periods. Hence, the small potential and additional changes in water levels are well within seasonal water levels fluctuations.

Separate recharge sources further supports the opinion that during an extended dry period the effect of the proposed project demand of 57.21 AF would be less than significant in terms of impact to ecology and water supply. The contribution of this maximum amount of 57.21 AFY from the SRA in dry years is likely substantially less than this amount which supports the conclusion that the proposed Project would not impact existing sustainable use in the CVA, and that the demand of the proposed project would not require existing users to look for an alternative source(s) of water in future extended dry periods.

Figure 2: Groundwater Elevations from Carmel Valley Aquifer Wells Upstream of September Ranch



MR-19: Significance Thresholds Regarding Water Supply and Availability

The Recirculated Draft REIR adopts significance thresholds for water supply and availability that are designed to evaluate how the proposed use of water affects environmental resources such as groundwater volume and levels, recharge, water supplies available to meet demand, fish and wildlife populations and essential functions, and aquatic and riparian habitat. Specifically, the Recirculated Draft REIR provides that the proposed project would have a significant water supply and availability impact if the project would:

- substantially degrade or deplete groundwater resources in the SRA or the CVA;
- interfere with groundwater recharge;
- use water in a wasteful manner;
- increase pumping or demand on the SRA or CVA so as to require person who diverts from the SRA or CVA to decrease water use or find substitute supplies in order to compensate for reduced water availability from the SRA or CVA;
- increase pumping or demand on the SRA or CVA so as to impair the health of the CVA itself by permanently affecting the ability of the CVA to recharge; and
- result in a yield from the groundwater system that is not sufficient to provide the project water demand on a long-term average basis and during droughts.

Some comments suggest that the EIR should adopt a significance threshold wherein any reduction in water availability (i.e., as a result of using water from the SRA) within the CVA or the Carmel River would constitute a significant impact *per se*, without reference to the nature or magnitude of those impacts and their effects on other resources. Some comments suggest or imply that a *per se* significance threshold is required based on the findings of Order No. WR 95-10 of the State Water Resources Control Board (SWRCB) and/or the 2002 document issued by NOAA Fisheries (aka National Marine Fisheries Service) regarding bypass flows on the Carmel River. The comments suggest that these documents indicate that environmental conditions on the Carmel River are so severe that *any* additional water use must, as a matter of law, constitute a significant impact.

For purposes of the Recirculated DEIR, the SWRCB Order No. 95-10 and the NOAA Fisheries 2002 Report, as well as other regulatory guidance documents, were carefully reviewed. As explained below, these documents primarily address circumstances that are substantially factually different than those presented by the proposed project. Moreover, to the extent these documents discuss the Carmel River generally, a fact-specific review of the documents demonstrates that they do ***not*** require the adoption of a *per se* significance threshold for water availability and supply. To the contrary, as explained below, those documents contain factual information that supports the significance thresholds adopted in the Recirculated Draft REIR and the impact conclusions derived from those thresholds.

SWRCB ORDER NO. WR 95-10

Prior to 1994, the State Water Resources Control Board ("SWRCB") received several complaints alleging that the California American Water Company ("Cal-Am"), a private water purveyor serving the Monterey Peninsula, was diverting water from the Carmel River without basis of right. The SWRCB investigated the complaints, held a public hearing, and considered evidence from Cal-Am and the complainants. Subsequently, in 1995 the SWRCB issued Order No. WR 95-10 in which it concluded that Cal-Am had legal rights for only up to 3,376 acre-feet per year ("AFY") of the 14,106

AFY that Cal-Am was then diverting from the Carmel River. However, the SWRCB determined that it would not exercise its enforcement authority so as to prohibit diversions as long as total annual diversions by Cal-Am do not exceed 11,285 AFY. The SWRCB has since confirmed that, as long as Cal-Am meets certain conditions (such as reporting and restrictions on place-of-use) and ultimately legitimizes its diversions, the total amount of water that Cal-Am can use without risking enforcement by the State Board is 11,825 AFY plus up to 380 AFY of treated wastewater supplies.

Order No. 95-10 necessarily considered only the rights of parties to that proceeding, and the impacts of the exercise of such rights by such parties. Neither the hydrology nor the water rights of the September Ranch property, that physical area comprising the September Ranch Aquifer ("SRA"), or the extent of connection between the SRA and CVA were issues in the SWRCB proceedings leading to Order No. 95-10. The only statement regarding hydrology in Order 95-10 was:

> "Cal-Am and other parties did not contest testimony and evidence which describes subsurface flow of the Carmel River as a subterranean stream flowing through a known and definite channel. Nor did Cal-Am or other parties offer evidence that the groundwater in the alluvial basin should be classified as percolating ground water not within the SWRCB's permitting jurisdiction. Accordingly, we find that downstream of RM 15 the aquifer underlying and closely paralleling the surface water course of the Carmel River is water flowing in a subterranean stream and subject to the jurisdiction of the SWRCB."

(Order, pp. 12-13.) This statement does not address the hydrology in the project area. Indeed, the only input from the SWRCB regarding the hydrology in the proposed project area is a 1998 letter submitted by a member of the Division of Water Rights staff member on the first environmental document that was prepared for the proposed project back in the mid-1990s. (The Recirculated Draft REIR does not rely on that original environmental document; see also Response SOCR1 to SOCR1-5.) Partly in response to the 1998 letter, and as part of preparation of the new, stand-alone Recirculated Draft REIR, the County commissioned an expert consultant team to evaluate the hydrology of the SRA and any connection the SRA might have to the CVA. Such investigation is unique to the environmental review process for the proposed September Ranch project, and has never been undertaken by the SWRCB or any other entity.

The extensive technical investigation undertaken for the Recirculated Draft REIR demonstrates that there is very limited connectivity between the CVA and the SRA and also that the two aquifers have separate sources of recharge. Accordingly, based on this investigation, the County has concluded that the SRA is a separate basin consisting of percolating groundwater. The analysis and conclusion were presented in the Recirculated Draft REIR provided for review in February 2006, along with specific responses to the issues raised in each paragraph of the 1998 letter from SWRCB staff. SWRCB staff did not submit any comments on the Recirculated Draft REIR.

In any case, regardless of how the hydrology of the two basins is characterized, the primary concern of all comments, including the SWRCB, has always been for the County to quantify and assess the degree to which pumping from the SRA area will, as a factual matter, affect flows in the Carmel River. The County performed such quantitative analysis in the Recirculated Draft REIR, and this analysis demonstrates that even at a worst case scenario of a 1:1 impact from pumping in the SRA to

the CVA (which is considered to be highly unlikely), such pumping will have immeasurably small and less than significant impacts on flow within the Carmel River.

The proceedings leading to Order 95-10 focused on the area below RM 10, nearly seven miles upstream from the area potentially affected by the proposed project. Order 95-10 expressed a concern that dry season surface flows had been depleted below the Narrows at RM 10 due to heavy groundwater pumping adjacent to the River, and that this pumping had a rapid effect of causing River levels to drop dramatically to the point where juvenile fish were stranded. These facts do not apply to the proposed project, which proposes minimal groundwater pumping a considerable distance from the River, with numerous pumping activities between the proposed project in the River. As explained in the Recirculated Draft REIR, due to the location of the proposed project, the only potentially affected area of the Carmel River is approximately the lowermost three miles of the Carmel River, downstream from River Mile ("RM") 3.6. Both NOAA Fisheries and fisheries experts consulted during environmental review of the proposed project have indicated that from RM 3.6 downstream to the ocean, fishery/steelhead habitat is limited and of poor quality, that there is little to no spawning habitat, and that the primary value of flows below RM 5.5 is to facilitate passage through shallow areas. As noted above, in reviewing the potential effects of the proposed project, fisheries biologists have concluded that even the maximum potential reduction will not have any measurable impact on water levels, and thus no impact on fish passage (and thus no potential for stranding) downstream of RM 3.6.

It is important to note that Order 95-10 did not preclude Cal-Am from continued pumping, but allowed Cal-Am to continue pumping at nearly 12,000 AFY even though Cal-Am had demonstrated rights for only a fraction of that quantity. Here, the water demand of the proposed project is .0045838% of the diversions that the SWRCB said Cal-Am could sustain without unreasonably impacting biological resources (11,825 AFY). The SWRCB allowed Cal-Am to continue substantial pumping where such pumping did not unreasonably impact biological resources; likewise, here, the Recirculated Draft REIR has undertaken a fact-specific analysis that demonstrates that there will be *no* impact to Carmel River steelhead or similar resources, much less an unreasonable one. Because projects result in benefits to the community as well as potential impacts, the County has determined that such fact-specific analysis and consideration of benefits in light of impacts is preferred to simply adopting a per se significance threshold that ignores specific data. This is entirely consistent with the approach taken in Order 95-10. Moreover, in light of the facts, a *per se* approach would be likely to be inconsistent with the guidance provided in Title 14, California Code of Regulations section 15041(a), which reaffirms constitutional requirements for a nexus between a project's causal connection to significant impacts, and the mitigation measures imposed.

SWRCB ORDER NO. WR 98-08 (FULLY APPROPRIATED STREAMS DECLARATION)

In Order No. WR 98-08, the SWRCB listed the Carmel River as "fully appropriated" from May 1 through December 31 of each year, in a document known as the Declaration of Fully Appropriation Streams ("FAS Declaration"). In the context of the FAS Declaration, "fully appropriated" is a legal/regulatory term of art that does not equate to a complete prohibition on additional uses of water from a listed water system. Instead, the listing of a watercourse on the Fully Appropriated Streams Declaration operates only to limit the circumstances under which new applications for appropriation of water may be accepted and processed by the SWRCB. Existing water right holders, including

overlying and riparian property owners, fully retain their rights to divert water from those watercourses (and the exercise of these rights is assumed by the Declaration). Moreover, a FAS Declaration specifies circumstances in which new applications to appropriate will still be accepted despite the listing. A FAS Declaration is thus a legal device for precluding new applications to appropriate, and is not strictly based on a factual assessment that no additional water is available for any person under any circumstances. Consequently, it does not support a per se significance threshold.

Absent a full adjudication of all water rights on a system by a court or the SWRCB or a contractual agreement to the contrary, the water rights of overlying or riparian right holders are superior to appropriative rights. The Recirculated Draft REIR concludes that the waters contained within the September Ranch basin are percolating groundwater not subject to the jurisdiction of the SWRCB. In the interest of providing a well-rounded picture for public discussion, the Recirculated Draft REIR also analyzes whether the project proponent would have riparian rights if such rights were relevant, and concludes that it would. Because the project proponent has rights that attach to the ownership of property, water use by the proposed project is not subject to the jurisdiction of the SWRCB or the FAS Declaration.

In any case, regardless of priority or regulatory jurisdiction, the Recirculated Draft REIR considers whether as a physical matter, water is available for use by the project, and also whether the reduction of water availability in the CVA or Carmel River as a result of the proposed project would be significant. The Recirculated Draft REIR demonstrates that water is available to the project. A reality check is that although due to judicial direction current water use on the property is not used as the CEQA baseline, the fact is that water in excess of the project demand has been pumped at the project site for over 11 years. Water is available as a physical matter. Moreover, based on a quantitative assessment of baseline pumping at 3 AFY plus anticipated project demand, the Recirculated Draft REIR concludes that water use associated with the proposed project would not be significant because such use would not result in any person or entity that currently uses water to have to reduce or forgo water use or to seek a new source of supply; would not adversely affect the integrity of the basins; and would not adversely affect biological resources within the Carmel River.

NOAA FISHERIES (AKA NATIONAL MARINE FISHERIES SERVICE OR NMFS) 2002 REPORT

The NMFS Report was primarily prepared to provide guidance to decision-makers considering approval of large off-stream storage projects that would result in appreciable reductions in Carmel River flow. (NMFS Report, p. 2) The Report recommends protection of surface and subterranean flows in the lower Carmel River during the low flow season specifically because of the value of summer flows for: 1) creating rearing habitat, 2) minimizing the stranding and dessication of juvenile fish, 3) providing a migratory corridor for the movements of fish and other aquatic life, 4) restoring riparian vegetation and habitats, and 5) restoring the quality of the Lagoon as habitat. (NMFS, iv.) The Report emphasizes that one of the purposes of flow recommendations are to preserve the natural flow variability and high stream flows to maintain ecosystem functions such as cleansing fine sediments from coarse substrates. (*Id.*) It is in order to protect these specific values that the Report recommends the following measures: no new diversions June 1 to October 1, minimum bypass flows of 20 cfs and 40 cfs during November and December, respectively, and limits on cumulative maximum instantaneous rates of diversion wherein such diversions should not exceed 5% of Q2 (*i.e.*,

the average 2 year high flow event), equivalent to an average daily flow of 72 cfs or an instantaneous rate of about 115 cfs. (*Id.*) The NOAA Fisheries Report expressly states that these recommendations are provided "in the absence of site-specific studies," and that estimates of water available for diversion "are a preliminary analysis and are not finely tuned for differences in stream flow at varying points along the river, nor do they include tributary flow below Robles del Rio gage or gains associated with removing unauthorized diversions from the River."

For the reasons outlined above, the 2002 Report does not support a *per se* significance threshold; to the contrary, the Report specifically recommends site-specific (*i.e.*, factual) studies such as that undertaken in the Recirculated Draft REIR. Here, the proposed project would potentially affect only one of the five values identified in the 2002 Report: *i.e.*, migration/passage; in this regard, the Report itself confirms the conclusion of the Recirculated Draft REIR and consulting biologists Entrix that the area of the Carmel River potentially affected by the proposed project (roughly, downstream of River Mile ("RM") 3.6) has limited habitat value for steelhead. Specifically, the Report confirms that below River Mile 5.5 "spawning habitat is very limited and of poor quality," and that the key value of flows below RM 5.5 is to "facilitate passage through shallow riffles." (*Id.*, p. iii.) The Recirculated Draft REIR assesses whether the maximum potential reduction in Carmel River flow resulting from the project would adversely affect steelhead passage, and concludes that based on the value of the habitat, the specific level of impact, the remote likelihood that such impact would occur, and considering the context of the baseline flows in the Carmel River and the accuracy of the gauges, that the proposed project would not, even under a worst case scenario, adversely affect steelhead passage below RM 3.6.

MR-20: Aquatic Biological Resources

Comments on the Recirculated Draft REIR raised no new issues and provided no new facts regarding potential impacts to aquatic biological resources. For clarity, the following discussion summarizes the analysis presented in the Recirculated Draft REIR. (See Recirculated Draft REIR, Section 4.9 and references cited therein.)

The area of the Carmel River potentially affected by the proposed project is the approximately the lowermost three miles of the Carmel River (downstream of River Mile ("RM") 3.6, which consist of a confined, sand-bottomed channel with essentially no steelhead rearing or spawning habitat. According to consulting fisheries biologists, as confirmed by a Carmel River discussion issued by NOAA Fisheries, the biological value of the potentially affected reach for steelhead is primarily as a migration corridor (i.e., for passage) from November through May. (See Recirculated Draft REIR, pp. 4.9-14 to 4.9-17; see also MR-19: Significance Thresholds Regarding Water Supply & Availability.)

As presented in the Recirculated Draft REIR, the range of maximum potential Carmel River flow reductions in dry (below normal precipitation) years is - 0.022 to -0.033 cubic feet per second (cfs), and in normal precipitation years from -0.002 to -0.034 cfs. (Tables 4.9-2 and 4.9-3.) In this portion of the Carmel River (downstream of RM 3.6), flows are typically high in the wintertime (sometimes in excess of 500 cfs) and then taper to zero flow in the summer months. During the wet season, the maximum potential reduction of flow of up to 0.034 cfs to the CVA thence Carmel River cannot be discerned in the flow of the Carmel River because the river flows are so high. When the Carmel River is dry, the water table is below the channel bottom and the reduction of flow of up to 0.034 cfs also

cannot be discerned in the River. At any time of the year, the maximum potential reduction of up to 0.034 cfs is so small that it cannot accurately be measured with the River. Given the essentially imperceptible nature of the maximum potential reduction of 0.034 cfs within the Carmel River, the Recirculated Draft REIR concludes that even under the most conservative assumptions, the proposed project will not result in appreciable (or measurable) reductions of flow in the Carmel River. The Recirculated Draft REIR concludes that a reduction of flow of 0.034 cfs would not affect migration below RM 3.6, would not reduce the number or restrict the range of steelhead in the Carmel River, or otherwise have any impact on steelhead in the Carmel River. As MR-18: Hydrology & Water Availability, and in individual response to comments, in order to address questions raised in the comments these same calculations were run for additional years (2000 and 2001) wherein the maximum potential reduction was identified as 0.14 cfs during October when the baseline condition of the River was dry, and even if it was not dry this quantity of reduction would still be undetectable in the River flow and would not affect migration (which occurs November through May) or any other essential function of biological resources such as steelhead. Although the original year analysis (1996 and 1997) is considered valid, even under the requested year–type analysis the proposed project would have no significant impact to biological resources.

It should be noted that the Recirculated Draft REIR does not conclude that the impact to either the River or water-dependent biological resources is less than significant because it is "de minimus." Rather, the impact (physical change) to the River (i.e., physical change in the River flow) is less than significant because "removal" of that particular (albeit small) quantity of water will not affect flow to the point where River functions such as, e.g., providing a pathway for steelhead migration would be at all impaired. Thus, it is expected that steelhead will go on much as before despite the reduction, without "noticing" any difference in their environment or their ability to engage in their essential functions. (Put another way, it is important to understand that a change in the amount of water available in a watercourse does not automatically translate into an impact on fish or other aquatic resources.) Here, the fact that the water reduction is too small to be measured by the devices that measure River flow (which measurements assist in assessing River health and managing for fish health) is just one of several factors identified that suggests the impact may be less than significant.

As noted in the Recirculated Draft REIR, consulting biologists at Entrix, Inc. has issued an opinion concluding that even rounding up the maximum potential reduction in flow to 0.04 cfs, such reduction would be essentially imperceptible during steelhead migration months of November through May. Entrix also concurred that based upon: 1) the location of the project and the habitat in the potentially affected reach of the Carmel River; 2) the timing of the potential impact relative to steelhead life-stage periodicity in the Carmel River and primarily in the potentially affected reach, and 3) the essentially imperceptible magnitude of the project's expected influence on flow in the reach, the proposed project would have no impact on steelhead or other biological resources in the Carmel River.

Some comments suggested that the impact to steelhead and similar resources should be considered significant because at present, there are periods of time in which flow in the River is zero. Under CEQA, the Recirculated Draft REIR is entitled to assume zero flow as baseline; because flow cannot be less than zero, there is no potential for impact to River resources as a result of the proposed project during times of zero flow. The only resource that could theoretically be affected is the underground

"root zones" or similar of riparian vegetation, and the Recirculated Draft REIR assessed the potential for this impact and concluded that it would be less than significant.

Regarding cumulative impacts, there are no direct impacts to Carmel River biological resources, and therefore CEQA provides that the EIR was not required to undertake a cumulative impacts analysis. However, in the interest of full disclosure the Recirculated Draft REIR nonetheless presented a cumulative analysis for Carmel River resources. That analysis is presented in Section 5.0 of the Recirculated Draft REIR. The cumulative analysis has been updated in two ways based on response to comments. First, some foreseeable units remaining within the Quail Meadows subdivision have been added to the cumulative water use in response to comments identifying these as reasonably foreseeable. Please see Appendix C, Hydrology Report (Tech Memo 6, Revised ("TM 6")). Second, County staff has indicated that the units identified in the Recirculated Draft REIR Section 5.0 for the "Dow" development are no longer reasonably foreseeable. Removing the Dow development and adding in Quail Meadows, the cumulative analysis is essentially the same (water use is a small amount lower) than presented in the Recirculated Draft REIR. Again, in the interest of providing all information likely to be requested by the public, although not required, TM 6 also presents a cumulative analysis that includes both the Dow and Quail Meadows developments, in which cumulative water use would be approximately 15 AFY more than presented in the Recirculated Draft REIR. Translated into potential reductions in the Carmel River, even this unlikely scenario would not exceed the significance threshold because it would not adversely affect the key value of the River habitat below RM 3.6 as a migratory corridor from November through May. The same conclusion applies to maximum potential impact during an extended drought period. See MR-18: Hydrology & Water Availability.

It is noted that although aquatic biological resource impacts are less than significant, measures are being proposed that would ensure careful use of the water resources and would ensure the proposed project demand would not use water beyond the quantities of water evaluated in the Recirculated Draft REIR. (See Mitigation Measures 4.3-1 and 4.3-2 listed in Section 6, Errata of this document and MR-17: Water Demands.) And, although there are no direct impacts to biological resources, and although there are no significant cumulative impacts, it is noted that policies applicable to most future development under the Carmel Valley Master Plan require such development to identify a net reduction in water use, which further reduces the potential for cumulative impacts. Finally, as a matter of real conditions on the ground, although NOT used as the baseline, it is worth noting that the proposed project would use less water than has been used on the property for the past 11 years, and without the proposed project the property owner would be entitled to continue such levels of use. Consequently, although the environmental baseline used for the quantitative analysis identifies an impact of increased use of water, and this EIR takes responsibility for such increased use in the impacts analysis, the real conditions on the ground are such that if the proposed project were to be approved, more water would be available in the River than is currently physically available.