

CHAPTER 7.0 NEPA PUBLIC INTEREST ISSUES

As discussed in subchapter 1.4.2, NEPA requires an analysis of the potential environmental impacts of the proposed action (i.e., the proposed permitting procedures), including alternatives to the proposed action and mitigation. As part of the NEPA review and alternatives analysis, the USACE is analyzing impacts on the environment associated with projects that receive authorization under Section 404 of the Clean Water Act. The analysis is being coordinated with the required analysis of alternatives under the Section 404(b)(1) Guidelines, and with those USACE regulations requiring an evaluation of the probable impacts of proposed activities on the public interest (in conjunction of issuance of permits) (33 CFR 320.4[a]).

Impacts on the aquatic ecosystem (biological resources and physical processes) are addressed in Chapter 6.0 for those alternatives carried forward after the preliminary alternatives analysis in Chapter 5.0. Chapter 7.0 presents an analysis of the following public interest issues for those alternatives carried forward for analysis in Chapter 8.0 (i.e., Alternative B-10 Modified, Alternative B-12, Alternative A-4, and Alternative A-5): non-aquatic biological resources; land use; transportation and circulation; agricultural and aggregate resources; air quality; noise; visual resources; cultural resources; population, housing and employment; and recreation.

7.1 NON-AQUATIC BIOLOGICAL RESOURCES

This chapter focuses on the impacts to other, non-aquatic, biological resources (i.e., major upland habitats and associated species) associated with the implementation of the alternatives carried forward for review under the Section 404(b)(1) Guidelines. In addition to summarizing the impacts on non-aquatic biological resources discussed in Chapter 6.0, this chapter also discusses impacts related to infrastructure.

In general, most impacts on non-aquatic biological resources are outside the USACE's statutory authority and responsibility under Section 404 of the Clean Water Act. The primary responsibility of evaluating and regulating impacts to non-aquatic biological resources resides with the County of Orange, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service. As part of the NEPA review, the USACE is analyzing impacts on the environment associated with projects that receive authorizations under Section 404 of the Clean Water Act.

The following infrastructure assumptions are applicable to the assessment of non-aquatic biological impacts associated with the SMWD Proposed Project and RMV Proposed Project alternatives:

Impacts related to infrastructure are divided into permanent impacts and temporary impacts. Permanent impacts were calculated using GIS information provided by SMWD and Rancho Mission Viejo Zollars regarding the extent of disturbance associated with proposed reservoir locations (Figure 2-3), conceptual road/stream crossings (Figure 8-1), bikeways and trails (Figure 8-2), water facilities (Figure 8-3a), non-domestic water facilities (Figure 8-3b), sewer facilities (Figure 8-3c), and drainage facilities (Figure 8-4).

Temporary impacts to vegetation communities would occur in association with construction, operation, and maintenance/repair of infrastructure of the same facilities noted above and maintenance of existing SMWD facilities (Figure 2-3) and existing RMV Planning Area facilities (Figure 8-5). It is important to note that the temporary impacts would be cumulative over the life of the proposed projects and they would be temporally distributed so that only a few acres at

any given time would be impacted. The assumptions for estimating temporary impacts and the responsible party (in parentheses) include:

- 34-foot temporary impact zone for construction of trails (i.e., 17 feet from edge of trail) (Rancho Mission Viejo);
- Temporary impacts of 4 acres around new groundwater storage tanks (Rancho Mission Viejo);
- Temporary impacts of existing small reservoirs that serve ranch purposes (e.g., stock ponds) (Rancho Mission Viejo);
- 2,500 square feet for temporary impacts to wells (Rancho Mission Viejo);
- 30-foot-wide temporary impact area for existing and future domestic and non-domestic water/sewer pipeline operation and maintenance/repair (SMWD);
- 40-foot-wide temporary impact area for maintenance/repair of the existing RMV Planning Area water system (Rancho Mission Viejo);
- 50-foot-wide temporary impact area for construction of drainage culverts (Rancho Mission Viejo); and
- Varying widths and lengths ranging from 140 feet wide to 250 feet wide and 230 feet long to 1,400 feet long for the construction zones beneath bridges (Rancho Mission Viejo).

7.1.1 THRESHOLDS OF SIGNIFICANCE

An alternative would have a significant non-aquatic biological impact if it would result in a:

- Substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate for listing, sensitive, rare, or otherwise special status plant or animal species in local or regional plans, policies, or regulations, or by the CDFG or USFWS where such impacts are within the purview of USACE jurisdiction and statutory responsibility.
- Significant interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites where such impacts are within the purview of USACE jurisdiction and statutory responsibility.

7.1.2 SAMP PROPOSED PERMITTING PROCEDURES

As discussed previously, the proposed RGP and LOP procedures have been developed for current and future participants in the SAMP. The future participants have not yet defined projects for permitting by the RGP or LOP procedures. For projects eligible for authorization by the maintenance RGP, impacts to land use would be minimal. Such activities would be associated with small maintenance projects, resulting in temporary impacts to a small area located in a mostly degraded landscape. New permanent impacts of any type are not expected. Impacts to non-aquatic biological resources are not expected under the RGP. For projects proposed by future participants that would be eligible for authorization by the LOP procedures,

not enough is known about the project size and location or potential impacts to analyze potential impacts to non-aquatic biological resources at this time. Such projects eligible for authorization by the LOP procedures will be subject to future NEPA review before a final permit decision can be made.

Current participants have defined their proposed project and have undergone extensive pre-application coordination with the USACE and other federal and state agencies. These projects, the SMWD Proposed Project, RMV Proposed Project, and other alternatives may have significant effects on the environment as noted in Chapter 6.0. Therefore, the authorization pursuant to the proposed permitting procedures may also have an effect on the environment per the thresholds of significance. These potential effects and minimization/mitigation measures applicable to these potential effects are further discussed below.

7.1.3 SMWD PROPOSED PROJECT

7.1.3.1 Impacts

Impact

7.1.3.1 *The SMWD Proposed Project would result in significant impacts to major upland vegetation communities.*

Major Upland Vegetation Communities and Listed Non-Aquatic Species

The SMWD Proposed Project (i.e., maintenance of existing facilities and construction and maintenance of the Upper Chiquita Reservoir) would result in the following impacts to major upland vegetation communities: 2.3 acres of chaparral, 13.7 acres of grassland, and 23.0 acres of coastal sage scrub. In addition, 32.2 acres of agriculture and 1.3 acres of developed land cover would be impacted related to construction of the Upper Chiquita Reservoir. Four California gnatcatcher locations would be impacted by the reservoir. In terms of temporary impacts associated with maintenance of existing facilities, 27.4 additional acres of grassland would be impacted, as well as 10.1 acres of coastal sage scrub, and 2.5 acres of woodland. Three additional gnatcatcher locations would be impacted. This is a significant impact.

Indirect Impacts

Indirect impacts for Upper Chiquita Reservoir would be primarily short-term and related to construction of the facility including noise, disturbance of soils, dust accumulation on adjacent vegetation, trash, and debris from the construction materials/workers. Grading activities may also result in the accidental disturbance of native vegetation. Although temporary, construction impacts are considered significant.

Long-term indirect impacts from Upper Chiquita Reservoir are not anticipated to be significant because lighting would be limited to the maintenance road and traffic would be minimal (periodic SMWD inspections). Therefore, impacts related to human activity and noise would not occur. Invasive species are not anticipated to be a significant impact because the reservoir would be covered. No water quality impacts are anticipated.

7.1.3.2 Mitigation Program

SMWD is a participant in the NCCP/MsAA/HCP and through participation in this process SMWD anticipates addressing its impacts to upland habitats, particularly impacts to coastal sage scrub and the California gnatcatcher. SMWD anticipates that likely mitigation for impacts

related to the construction and operation of the Upper Chiquita Reservoir would be restoration of temporarily disturbed areas with coastal sage scrub species and contributions towards funding of the GPA/ZC (or future NCCP/MsAA/HCP) Adaptive Management Program. SMWD anticipates that likely mitigation for maintenance of its existing facilities would be minimization measures related to construction such as placement of Environmentally Sensitive Area fencing around sensitive resources, dust and litter control, erosion and sedimentation control, and post-project restoration. In addition, SWMD anticipates contributions towards funding of the GPA/ZC (or future NCCP/MsAA/HCP) Adaptive Management Program would also provide mitigation for the temporary impacts associated with maintenance of their existing facilities.

7.1.3.3 Level of Significance After Mitigation

Through participation in the NCCP/MsAA/HCP, SMWD anticipates that impacts to upland habitats and associated species such as coastal sage scrub and the California gnatcatcher would be reduced to a level of less than significant. Should the NCCP/MsAA/HCP not be approved for any reason, the USACE would consult with the USFWS pursuant to Section 7 of the FESA for any Section 404 permit action involving the SMWD that may affect a listed threatened and/or endangered species or adversely modify their critical habitat and would require mitigation for adverse effects as a result of the consultation.

7.1.4 ALTERNATIVE B-10 MODIFIED

7.1.4.1 Impacts

Impact

7.1.4.1 *The Alternative B-10 Modified Alternative would result in significant impacts to major upland vegetation communities.*

Major Upland Vegetation Communities and Listed Non-Aquatic Species

Tables 6-8 and 6-9 in Chapter 6.0 summarize potential impacts to major upland vegetation communities and listed non-aquatic species respectively associated with the B-10 Modified Alternative (for more detailed background information, please refer to the GPA/ZC EIR 589).

Grassland

With implementation of the infrastructure necessary to support the B-10 Modified Alternative, impacts to grassland set forth in Table 6-8 would increase to a total of 1,827 acres. Infrastructure includes, but is not limited to the following types of facilities; roads, trails and bikeways, water and sewer lines, lift stations; pump stations, reservoirs, and drainage outfalls. Although annual grasslands are considered to have relatively low biological value when compared to native vegetation communities, they do provide habitat for grassland species. Impacts on annual grasslands would be considered potentially significant because of the amount that would be impacted. Native grasslands are considered a sensitive vegetation community due to their limited distribution and their potential to support sensitive plant species. Impacts to native grassland are considered significant.

Coastal Sage Scrub

Within implementation of the infrastructure necessary to support the B-10 Modified Alternative, impacts to coastal sage scrub set forth in Table 6-8 would increase to a total of 2,188 acres. Coastal sage scrub is considered a sensitive plant community due to its limited distribution and

its potential to support sensitive plant and wildlife species such as the endangered California gnatcatcher. Impacts to coastal sage scrub are considered significant.

Woodland and Forest

Within implementation of the infrastructure necessary to support the B-10 Modified Alternative, impacts to woodland and forests would set forth in Table 6-8 would increase to a total of 461 acres of forest impacts and to a total of 94 acres of woodland impacts. Woodland and forests are considered sensitive vegetation communities because of their limited distribution and because they provide high quality wildlife habitat. Impacts to woodland and forest impacts are considered significant.

Cliff and Rock

The B-10 Modified Alternative would result in the same impacts to cliff and rock (approximately 5 acres). Cliff and rock is a native community that is considered relatively uncommon in the project region. Impacts on cliff and rock would be considered significant.

Impact

7.1.4.2 *The Alternative B-10 Modified Alternative would result in significant impacts to the thread-leaved brodiaea.*

Listed Non-Aquatic Species

Chapter 4.1.3, Biological Resources, discusses the sensitive wildlife and plant species with potential to occur in the SAMP Study Area. Table 6-9 in Chapter 6.0 provide a broad overview of the impacts of the B-10 Modified Alternative to state- or federally-listed Threatened or Endangered Non-Aquatic Species.

Thread-leaved Brodiaea

The B-10 Modified would impact 11 locations totaling 428 individuals. Implementation of infrastructure necessary to the B-10 Modified Alternative would result increase these impacts by an additional 3 locations and 153 individuals on a permanent basis and 3 locations and 77 individuals on a temporary basis. Impacts to brodiaea are considered significant.

California Gnatcatcher

The B-10 Modified Alternative impacts 71 locations of California gnatcatchers. These impacts are considered significant. Implementation of infrastructure necessary to support the B-10 Modified Alternative would result in total impacts of 73 locations. The B-10 Modified Alternative would result in impacts to gnatcatcher populations in the San Juan Creek Watershed, particularly the location in Chiquita Canyon which is considered to be the major population in the SAMP Study Area, but these impacts are below the maximum level established in the Southern Planning Guidelines.

Impact

7.1.4.3 *Implementation of Alternative B-10 Modified Alternative would result in significant indirect impacts to biological resources.*

Indirect Impacts

Short-term Construction Noise Impacts

As noted in Chapter 6.0, nesting raptors and other sensitive bird species would potentially incur temporary short-term impacts from construction noise if present in the vicinity development activities associated with the B-10 Modified Alternative, and may be temporarily displaced due to these disturbances. This short-term impact is considered significant.

Other Short-term Construction Impacts

Grading activities would disturb soils and result in the accumulation of dust on the surface of the leaves of trees, shrubs, and herbs. Grading activities would also result in an accumulation of trash and debris. Grading activities may result in the accidental disturbance of native vegetation. Construction impacts are considered a significant impact.

Impact

7.1.4.4 *The introduction of invasive species into the area would be a significant impact.*

Long-term Indirect Effects: Invasive Exotic Species

Implementation of Alternative B-10 Modified would include landscaping adjacent to proposed development. The landscaping has the potential to include planting ornamental species that can be invasive (e.g., Japanese honeysuckle [*Lonicera japonica*], fan palm [*Washingtonia* spp.], Peruvian pepper tree [*Schinus molle*], pampas grass [*Cortaderia jubata*], etc.). Seeds from invasive species may escape to natural areas and degrade the native vegetation. This impact would be considered potentially significant.

The alternative has the potential to increase the existing population of invasive invertebrate/vertebrate species on the RMV Planning Area or introduce new invasive species to previously undisturbed areas. Three invasive invertebrate species are known to occur within the SAMP Study Area including Argentine ant (*Linepithema humile*), red imported fire ant (*Solenopsis invicta*), and crayfish (*Procambrus* spp.). These species pose direct and indirect threats to native species at the urban-natural interface, including direct predation of native vertebrates and competition/displacement of important invertebrate prey of native species. Populations of vertebrate species including introduced fishes, bullfrog, brown-headed cowbird, European starling, opossums, and feral mesopredators such as cats and dogs also have the potential to become problematic within the natural open space areas adjacent to proposed development. These species can be an important factor in the decline of native wildlife populations in the SAMP Study Area.

Impact

7.1.4.5 *Changes in water quality may affect sensitive fish, amphibian, and reptile species; this is considered a significant impact.*

Long-term Indirect Effects: Water Quality

Additional impacts to the biological resources in the RMV Planning Area could occur as a result of changes in water quality resulting from implementation of one of the proposed alternatives. Runoff from the development areas and associated arterials containing pesticides, herbicides, petroleum products, and other residues and the improper disposal of petroleum and chemical products from construction equipment have the potential to adversely affect the water quality

within the RMV Planning Area and, in turn, affect populations of aquatic species. Of particular concern in regards to pollutants, is the effect pollutants, borne by runoff, may have on listed species proximate to the proposed development areas/roadways that live in wet environments (creeks) or require wet environments for an important part of their life cycle (reproduction). Pollutants would potentially affect various sensitive fish, amphibian, and reptiles within the SAMP Study Area. This impact is considered potentially significant.

Impact

7.1.4.6 *The introduction of new lighting sources in species sensitive areas could result in significant impacts.*

Long-Term Lighting Effects

Lighting in development areas associated with the B-10 Modified Alternative could result in an indirect effect on the behavioral patterns of nocturnal and crepuscular (i.e., active at dawn and dusk) wildlife adjacent to these areas. Of greatest concern is the effect on small ground-dwelling animals that use the darkness to hide from predators, and the effect on owls, which are specialized night foragers relying on the darkness for cover. These impacts would be considered potentially significant because the RMV Planning Area is primarily undeveloped. Depending on species sensitivity and the proximity of species use areas to development areas, lighting impacts could be significant.

Impact

7.1.4.7 *Increased human activity in the RMV Planning Area could significantly degrade habitat; this would be a significant impact.*

Long-Term Human Activity Effects

The increase in human activity would increase the disturbance of natural open space adjacent to development associated with the B-10 Modified Alternative. Human disturbance could disrupt normal foraging and breeding behavior of wildlife remaining in the area adjacent to the development, diminishing the value of the habitat. Wildlife stressed by noise may vacate the natural open space adjacent to the development, leaving only wildlife tolerant of human activity. This increased disturbance is called an “edge effect.” This impact would be potentially significant because it could result in degradation of habitat.

7.1.4.2 Mitigation Program

In conjunction with the approval of GPA/ZC EIR 589, the County of Orange adopted a mitigation program to reduce the impacts associated with potential impacts on biological resources, specifically grassland, coastal sage scrub, woodland, and forest. These measures are listed below to provide the reader context of the mitigation program that is included as an integral part of the B-10 Modified Alternative adopted by the County of Orange. It is assumed that the same mitigation measures would apply to the B-12 Alternative (RMV Proposed Project). Although these measures would be implemented as part of the development project and would be the responsibility of the County of Orange for monitoring, the mitigation measures reviewed in this chapter are considered to be integral elements of both alternatives. All references to Project Design Features and Mitigation Measures are to GPA/ZC EIR 589.

Project Design Features

- PDF 4.9-1 Prior to approval of the first Master Area Plan, the landowner shall enter into an agreement with the County regarding the 15,132-acre RMV Open Space. The agreement shall address:
- Method of preservation for this open space (i.e., conservation easement or similar mechanism);
 - Permitted uses within the open space as defined in the PC Text;
 - Non-permitted uses within the open space as defined in the PC Text;
 - Phasing of open space preservation areas. Phasing of open space areas will be consistent with development phasing; and
 - Funding mechanism for implementation of the Adaptive Management Program (AMP) as described in the Draft Program EIR.

Major Upland Vegetation Communities and Listed Non-aquatic Species

- PDF 4.9-2 Upon dedication of land to the RMV Open Space in accordance with the terms of the open space agreement described in PDF 9-1, the project applicant shall implement the Adaptive Management Program contained in Appendix J (of the GPA/ZC EIR 589) on the RMV Open Space, including the following sub-plans:
- Plant Species, Translocation, Propagation and Management Plan;
 - Habitat Restoration Plan;
 - Invasive Species Control Plan;
 - Grazing Management Plan; and
 - Wildland Fire Management Plan.

Water Quality

- PDF 4.5-3 **Water Quality Management Plan.** A conceptual Water Quality Management Plan (the *Draft WQMP*) has been developed for the proposed project in compliance with the Model Water Quality Management Plan requirements of the County of Orange DAMP. The *Draft WQMP* addresses the following elements:
- **Site-design BMPs:** Site design BMPs have been selected to address the creation of a hydrologically functional project design that seeks to mimic the natural hydrologic regime.
 - **Source Control BMPs:** Source controls BMPs (routine non-structural BMPs, routine structural BMPs, and BMPs for individual categories/project features) have been selected, including a combined flow and water quality control system to address hydrologic water balance and water quality treatment.

- **Urban Runoff and Stormwater Control Elements:** Water balance and flow duration analyses and conceptual combined flow and water quality control systems have been prepared for each sub-basin.
- **Stormwater BMP Operation and Maintenance Program:** An operation and maintenance program has been developed to address the following elements: Maintenance Responsibility, General Operation and Maintenance Activities, Routine Operation and Maintenance Activities and Major Operation and Maintenance Activities.
- **Stormwater Monitoring Program:** A stormwater monitoring program has been developed for the Water Quality BMPs.

Standard Conditions and Requirements

Short-term Impacts

- SC 4.7-1 All construction contractors shall comply with South Coast Air Quality Management District (SCAQMD) regulations, including Rule 403, Fugitive Dust, and Rule 402, Nuisance. All grading (regardless of acreage) shall apply best available control measures for fugitive dust in accordance with Rule 403. To ensure that the project is in full compliance with applicable SCAQMD dust regulations and that there is no nuisance impact off the site, the contractor would implement each of the following:
- a. Moisten soil not more than 15 minutes prior to moving soil or conduct whatever watering is necessary to prevent visible dust emissions from traveling more than 100 feet in any direction.
 - b. Apply chemical stabilizers to disturbed surface areas (i.e., completed grading areas) within five days of completing grading or apply dust suppressants or vegetation sufficient to maintain a stabilized surface.
 - c. Water excavated soil piles hourly or cover with temporary coverings.
 - d. Water exposed surfaces at least twice a day under calm conditions. Water as often as needed on windy days when winds are less than 25 miles per day or during very dry weather in order to maintain a surface crust and prevent the release of visible emissions from the construction site.
 - e. Wash mud-covered tires and under-carriages of trucks leaving construction sites.
 - f. Provide for street sweeping, as needed, on adjacent roadways to remove dirt dropped by construction vehicles or mud, which would otherwise be carried off by trucks departing from project sites.

Water Quality

- SC 4.5-8 **Water Quality Management Plan.** Prior to the recordation of any final subdivision map (except those maps for financing or conveyance purposes only) or the issuance of any grading or building permit (whichever comes first), the

applicant shall submit for review and approval by the Manager, Inspection Services Division, a Water Quality Management Plan (WQMP) specifically identifying Best Management Practices (BMPs) that will be used onsite to control predictable pollutant runoff. This WQMP shall identify, at a minimum, the routine structural and non-structural measures specified in the current Drainage Area Management Plan (DAMP). The WQMP may include one or more of the following:

- Discuss regional water quality and/or watershed programs (if available for the project);
- Address Site Design BMPs (as applicable) such as minimizing impervious areas, maximizing permeability, minimizing directly connected impervious areas, creating reduced or “zero discharge” areas, and conserving natural areas;
- Include the applicable Routine Source Control BMPs as defined in the DAMP.
- Demonstrate how surface runoff and subsurface drainage shall be managed and directed to the nearest acceptable drainage facility (as applicable), via sump pumps if necessary.

SC 4.5-9

Compliance with the WQMP. Prior to the issuance of a certificate of use and occupancy, the applicant shall demonstrate compliance with the WQMP in a manner meeting the satisfaction of the Manager, Inspection Services Division, including:

- Demonstrate that all structural Best Management Practices (BMPs) described in the project’s WQMP have been implemented, constructed and installed in conformance with approved plans and specifications;
- Demonstrate that the applicant has complied with all non-structural BMPs described in the project’s WQMP;
- Submit for review and approval an Operations and Maintenance (O&M) Plan for all structural BMPs for attachment to the WQMP;
- Demonstrate that copies of the project’s approved WQMP (with attached O&M Plan) are available for each of the incoming occupants;
- Agree to pay for a Special Investigation from the County of Orange for a date (12) twelve months after the issuance of a Certificate of Use and Occupancy for the project to verify compliance with the approved WQMP and O&M Plan; and
- Demonstrate that the applicant has agreed to and recorded one of the following: (1) the CC&R’s (that must include the approved WQMP and O&M Plan) for the project Home Owner’s Association, (2) a water quality implementation agreement that has the approved WQMP and O&M Plan attached, or (3) the final approved Water Quality Management Plan (WQMP) and Operations and Maintenance (O&M) Plan.

Lighting

- SC 4.10-3 Prior to issuance of any building permit, the applicant shall demonstrate that all exterior lighting has been designed and located so that all direct rays are confined to the property in a manner meeting the approval of the Manager, Building Permit. (County of Orange Standard Conditions of Approval, LG01)

Mitigation Measures

Short-term Impacts

- MM 4.9-26 During construction, a construction monitoring program shall be implemented to mitigate for short-term noise impacts to nesting raptors, to the satisfaction of the County of Orange, Manager, Subdivision and Grading. Indirect impacts shall be mitigated by limiting heavy construction (i.e., mass grading) within 300 feet of occupied raptor nests. Occupied raptor nests shall be marked as “Environmentally Sensitive Areas” on grading/construction plans and shall be protected with fencing consisting of T-bar posts and yellow rope. Signs noting the area as an “Environmentally Sensitive Area” will be attached to the rope at regular intervals.

Invasive Species

- MM 4.9-27 All plants identified by the California Exotic Pest Plant Council as an invasive risk in southern California shall be prohibited from development and fuel management zones adjacent to the RMV Open Space. The plant palette for fuel management zones adjacent to the RMV Open Space shall be limited to those species listed on the Orange County Fire Authority Fuel Modification Plant List. Plants native to Rancho Mission Viejo shall be given preference in the plant palette.

Prior to issuance of fuel modification plan approvals, the County of Orange shall verify that (1) plants identified by the California Exotic Pest Plant Council as an invasive risk in Southern California are not included in plans for fuel management zones adjacent to the RMV Open Space, and (2) the plant palette for fuel management zones adjacent to RMV Open Space is limited to those species listed on the Orange County Fire Authority Fuel Modification Plant List.

Prior to the recordation of a map for a tract adjacent to the RMV Open Space, the County of Orange shall verify that the CC&Rs contain language prohibiting the planting of plants identified by the California Exotic Pest Plant Council as an invasive risk in Southern California in private landscaped areas.

Water Quality

- MM 4.5-3 **Master Area Plan-Level Water Quality Management Plan.** Prior to the approval of a Master Area Plan for each Planning Area, the applicant shall prepare a Master Area Plan WQMP that (i) is consistent with the terms and content of the Draft WQMP (see PDF 4.5-3) and (ii) provides more particularized information and detail concerning how the provisions of the Draft WQMP will be implemented within the area covered by the individual Master Area Plan. At a minimum, each Master Area Plan WQMP will provide supplemental and refined

information concerning (i) how site-design, source-control and treatment control BMPs will be implemented at the Master Area Plan level for the area in question, (ii) potential facility sizing and location within the subject Master Area Plan area, and (iii) monitoring, operation and maintenance of stormwater BMPs within the relevant Master Area Plan area.

MM 4.5-4 Sub-Area Plan-Level Water Quality Management Plan. Prior to the approval of a Sub-Area Plan for any portion of the project area that is the subject of an approved Master Area Plan, the applicant shall prepare a Sub-Area Plan WQMP that (i) is consistent with the terms and content of the Draft WQMP (see PDF 4.5-3), (ii) is consistent with the terms and content of the relevant Master Area Plan WQMP (see MM 4.5-3) and (iii) provides more particularized information and detail concerning how the provisions of the Draft WQMP and the relevant Master Area Plan WQMP will be implemented within the area covered by the individual Sub-Area Plan. At a minimum, each Sub-Area Plan WQMP will provide supplemental and refined information concerning (i) how site-design, source-control and treatment control BMPs will be implemented at the Sub-Area Plan level for the area in question, (ii) the size, location and design features of the individual water resource facilities to be developed within the subject Sub-Area Plan area, and (iii) monitoring, operation and maintenance of the stormwater BMPs within the relevant Sub-Area Plan area.

MM 4.5-6 Combined Flow and Water Quality Control System. All developments will be designed in order to achieve flow duration matching, address the water balance, and provide for water quality treatment through a combined flow and water quality control system (termed combined control system).

Combined Control System Components

The proposed combined control system will include one or more of the following components (see Exhibits 4.5-14, 15, and 16¹), each of which provides an important function to the system:

- Flow Duration Control and Water Quality Treatment (FD/WQ) Basin
- Infiltration Basin
- Bioinfiltration Swale
- Storage Facility for Recycling Water for Non-Domestic Supply
- Diversion Conduit to Export Excess Flows out of the Sub-basin.

The flow duration control and water quality treatment basin provides the initial flow and water quality treatment control functions to the system. The remaining components address the excess flows, alone or in combination with each other, generated during wet weather. Additional water quality treatment control is also provided in the infiltration basin and bioinfiltration swale. The following subsections describe each combined control system component in more detail.

¹ See Section 4.5 of GPA/ZC EIR 589.

1. Flow Duration Control and Water Quality Treatment (FD/WQ) Basin

The flow duration control and water quality treatment (FD/WQ) basin will provide both flow control and water quality treatment in the same basin. Detention basins are the most common means of meeting flow control requirements. The concept of detention is to collect runoff from a developed area and release it at a slower rate than it enters the collection system. The reduced release rate requires temporary storage of the excess amounts in a basin with release occurring over a few hours or days. The volume of storage needed is dependent on (1) the size of the drainage area; (2) the extent of disturbance of the natural vegetation, topography and soils, and creation of impervious surfaces that drain to the stormwater collection system; (3) the desired detention capacity/time for water quality treatment purposes; and (4) how rapidly the water is allowed to leave the FD/WQ basin, i.e., the target release rates.

The FD/WQ basin shall incorporate extended detention to provide water quality treatment for storm flows. The FD/WQ basin shall also incorporate wetland vegetation in a low flow channel along the bottom of the basin for the treatment of dry weather flows and small storm events.

To the extent feasible depending on the topography and grade, the FD/WQ basin will be located in areas where there is a larger depth to groundwater and more infiltrative soils. The FD/WQ basin shall be designed to have two active volumes, a low flow volume and a high flow volume. The low flow volume is designed to capture small to moderate size storms, the initial portions of larger storms, and dry weather flows. The high flow volume is designed to store and release higher flows to maintain, to the extent possible, the pre-development runoff conditions.

2. Infiltration Basin

The second element in the combined control system shall consist of a separate downstream, shallow basin designed to infiltrate stormwater where soils have a high infiltration capacity. The infiltration basin is sized to infiltrate all the flows released from the lower volume in the FD/WQ basin; nonetheless, an overflow system would convey excess flows that may occur during very wet years to the bioinfiltration swale discussed below. Features of the proposed combined control system that shall guard against groundwater contamination include: (1) pretreatment of all runoff in a FD/WQ basin before it enters the infiltration basin, and (2) locating infiltration basins where there is at least 10 feet of separation to the groundwater.

3. Bio-infiltration Swale

The third element of the combined control system shall be a bio-infiltration swale that leads from the FD/WQ basin to the stream channel. A bio-infiltration swale is a relatively flat, shallow vegetated conveyance channel that removes pollutants through infiltration, soil adsorption, and uptake by the vegetation. In areas characterized by terrains with good infiltration capabilities, flows released from the FD/WQ basin and carried in the bio-infiltration swale will mimic pre-development conditions, in which low flows

infiltrate in the soils and only high flows reach the main stem of the stream channel. In catchments where development is located on less pervious soils and therefore pre-development runoff is higher, the swale may be lined to better mimic pre-development hydrology or flows may be piped to the stream.

4. Storage Facility for Recycling Water for Non-Domestic Supply

The fourth possible element of the combined control system shall be storage of surface water flows for recycling where there is opportunity for reuse of water for irrigation, such as a golf course, residential common area, or local park. All elements of the combined flow and water quality control system shall be reviewed with the SMWD for determination of feasibility of reuse and connection to non-domestic irrigation facilities. Diversion of outflows from the FD/WQ basin to non-domestic water supply reservoirs will be conducted if feasible and cost effective.

5. Diversion Conduit to Export Flows out of the Sub-basin

The fifth possible element of the combined control system shall be the provision to export flows out of the sub-basin. This element provides an additional option that may be employed to better preserve the pre-development water balance within the sub-basin. Such diversions may be desirable where excess runoff could result in increased stormwater flows or increased base flows in sensitive streams. However, all diversions of drainage area are subject to approval by the County of Orange. The diversions would be for excess runoff only and would only be feasible for development bubbles that adjoin other sub-basins having less sensitive stream channels, or are close to San Juan Creek or Lower Cristianitos Creek, which have characteristics that allow them to handle additional flows without causing damage to the stream channel. In some locations, such as Cañada Chiquita, it may also be feasible to divert flows to the wastewater treatment plant for reclamation.

MM 4.9-19 Prior to issuance of a grading permit for Planning Area 8, the Project Applicant shall demonstrate to the satisfaction of the County's Director of Planning Services Department or his/her designee that the facilities specified in the Water Quality Management Plan to address pollutants of concern and conditions of concern are shown on the project plans.

Lighting

MM 4.9-28 Lighting shall be shielded or directed away from RMV Open Space habitat areas through the use of low-sodium or similar intensity lights, light shields, native shrubs, berms or other shielding methods.

Prior to the issuance of building permits for a tract with public street lighting adjacent to RMV Open Space habitat areas, the County of Orange shall verify that measures to shield such lighting have been incorporated in the building plans.

MM 4.10-1 All lighting along the perimeter of natural areas, particularly street lights, shall be downcast luminaries and shall be shielded and oriented in a manner that will

prevent spillage or glare into the remaining natural and open space areas. Final lighting orientation and design shall be to the satisfaction of the County of Orange, Manager, Building Permits. Prior to final inspection or issuance of a certificate of occupancy, where applicable, the Manager, Building Permit, shall cause to be performed a photometric field inspection of the approved lighting system for the project. The inspection shall verify the proper construction and installation of materials within the approved plan, determine the actual light patterns and values through light meter testing and observation, and determine the extent of any errant lighting. Deviations and/or violations shall be corrected prior to the final clearance for the project.

Human Activity

MM 4.9-28 Access to the RMV Open Space shall be managed and directed as specified in the Open Space Agreement between the County of Orange and RMV. Where potential conflicts between development and open space are identified per the agreement the following shall occur:

Prior to the issuance of building permits for a tract adjacent to the RMV Open Space, the County of Orange shall verify that measures, such as fencing, signs etc., to direct the public to public access points within the RMV Open Space have been incorporated into the building plans. To the extent that public access points are not identified, the County of Orange shall verify that measures, such as fencing, signs etc., to prohibit public access have been incorporated into the building plans.

USACE Special Conditions

Even with avoidance, additional special conditions for Rancho Mission Viejo (SC) and for the Santa Margarita Water District (SM SC) would be required to ensure proposed impacts are minimized to the maximum extent practicable. These special conditions include:

- SC I.A.1 The permittee shall confine development and supporting infrastructure to the footprint (including infrastructure alignments and facilities within designated open space) shown on Figures 8-1, 8-2, 8-3a, 8-3b, 8-3c, and 8-4.
- SC I.A.2 For the impact analysis areas, the permittee shall limit the size of the projects to 550 acres of development for Planning Area 4, 175 acres of reservoir for Planning Area 4, 500 acres of development for Planning Area 8, and 50 acres of orchards in Planning Areas 6 or 7.
- SC I.A.3 The permittee shall avoid all impacts to the thread-leaved brodiaea (a threatened facultative wetland plant) in a major population in a key location (as described in Southern NCCP Planning Guidelines) on Chiquadora Ridge as part of construction for Planning Area 2.
- SC I.B.1 Outside the footprint shown in Figure 8-1, the permittee shall insure post-project surface water hydrology for any stream of Strahler 3rd order or greater shall not be substantially different from pre-project hydrology. Strahler order may be determined from the Glenn Lukos Association jurisdictional determination.

- SC I.B.2 For any stream located outside the development footprint of Strahler 3rd order or greater receiving project discharges, the permittee shall undertake adaptive management measures to insure no change in channel geomorphology. Strahler order may be determined from the Glenn Lukos Associates jurisdictional determination. The permittee shall provide a monitoring plan to the Corps explaining the protocol, standards constituting adverse impacts, and remedial measures should thresholds for adverse impacts be reached. The stream stabilization program required by Ranch Plan EIR Mitigation Measure 4.5-7 and the stream monitoring program required by Ranch Plan EIR Mitigation Measure 4.5-8 shall be submitted as part of the monitoring plan for review and approval.
- SC I.B.4 For any Corps jurisdictional feature vegetated with coast live oaks located outside of the development footprint that receive discharges, the permittee shall monitor the health of the oaks for five years after the start of the discharges. Any oaks greater than six feet in height that die of excessive inundation, shall be mitigated at a ratio of one ten-gallon coast live oak for loss of one inch diameter at breast height. The permittee shall provide a monitoring plan to the Corps explaining the monitoring protocol and the standards constituting adverse impacts.
- SC I.C.1 The permittee shall abide by all the terms and conditions of the applicable Section 401 certification.
- SC I.C.2 The permittee shall develop and implement master area and sub-area water quality management plans for each Planning Area (Ranch Plan EIR Mitigation Measures 4.5-3 and 4.5-4). A copy of the plan shall be submitted to the Corps for review and approval for consistency with the Conceptual Water Quality Management Plan approved as part of the SAMP EIS. The Corps shall have 30-days to review and approve any submitted plan. If the Corps does not provide comments within 30 days, the submitted plan shall be deemed approved. In the event of a disagreement between the Corps requirements and those of the County of Orange, the permittee, Corps and County shall agree on a resolution of said disagreement within 15 days. Copies of the annual reports shall be provided to the Corps within 30 days of completion.
- SC I.D.1 The permittee shall design new arterial roads or existing arterials upgraded to serve Ranch Mission Viejo projects along San Juan Creek, Chiquita Creek, and Gobernadora Creek in order to protect wildlife. The bridge crossings shall provide a minimum of 20 feet of clearance from the stream bottom. Chain link fencing or functionally similar barrier of 10 feet in height (or as revised/determined through adaptive management) shall be installed on both sides of the approaches to the bridge for a distance of 100 feet away (or as revised/determined through adaptive management) from the stream to deter wildlife from entering the roadway.
- SC I.D.2 The permittee shall provide wildlife movement corridors along San Juan Creek, Canada Chiquita, Canada Gobernadora, Cristianitos, Gabino, and Talega Creeks. The corridor along San Juan Creek upstream of Trampas Canyon to the edge of the RMV property shall provide a 400-meter wide corridor (200-meter setback off the centerline) except for the narrowing due to infrastructure facilities; exclude residential or commercial structures shall not be constructed within the 400-meter corridor; allow for limited fuel modification zones, trails, and related

recreational facilities (i.e., interpretative signage, staging areas, picnic areas); and allow for infrastructure facilities including natural treatment systems for water quality treatment and related drainage facilities, outfalls that are located outside of the ordinary high water mark, approved bridge crossings, and water, sewer, and power facilities as set forth in Figures 8-3a, 8-3b, and 8-3c.

- SC I.D.4 The permittee shall use best management practices, including and not limited to detention basins, retention basins, low-water irrigation, increase in pervious surfaces, and/or diversion of runoff to a collection system for re-use for irrigation purposes to prevent dry season runoff from entering San Juan Creek (upstream of Trampas Canyon), Gabino Creek, and Talega Creek from September to mid-October.
- SC I.D.5 The permittee shall eradicate bullfrogs from any water quality treatment basin within 0.5 km of streams known to have arroyo toads. The eradication shall occur at the very least from September to mid-October to interrupt the annual breeding cycle. Permittee may use a variety of approaches to ensure compliance with this condition. Eradication efforts shall be monitored annually as part of the Aquatic Resources Adaptive Management Plan. If eradication efforts are not successful, the permittee shall cause the water quality treatment basin to be dry from September to mid-October by diverting dry season runoff to a collection system for re-use for irrigation purposes.
- SC I.D.6 The permittee shall minimize light-spillover associated with the development to minimize indirect impacts to wildlife. Lighting shall be directed away from habitat areas through the use of low-sodium or similar intensity lights, light shields, native shrubs, berms, placement low near the ground, or other shielding methods.
- SC I.D.7 The permittee shall refrain from using invasive exotic vegetation within fuel modification zones. Invasive exotic vegetation are those rated as medium or high by the California Invasive Plant Council in terms of their invasiveness.
- SC II.2 The permittee shall perform initial vegetation clearing in Waters of the U.S. between September 15 and March 15. Work in waters may occur between March 15 and September 15 if breeding bird surveys indicate the absence of any nesting birds within a 50-foot-wide radius.
- SC II.3 With each project LOP application, the permittee shall provide plans to the Corps showing the limits of grading, upland haul routes, fueling and storage areas for vehicles outside of waters of the U.S., temporary impact areas, dewatering areas, and temporary access roads within waters of the U.S. The permittee shall conform the grading to pre-identified impacts.
- SC II.6 The permittee shall identify the limits of impacts in the field with brightly-colored flags, tape, or other marking to prevent unauthorized grading outside approved footprints.
- SC II.7 The permittee shall install toad exclusion fencing for any work within 300 feet of a known population of arroyo toad adjacent to San Juan Creek, Verdugo Creek, Gabino Creek, Cristianitos Creek, and Talega Creek for activities occurring outside the estivation period.

- SC II.8 The permittee shall implement best management practices to prevent the movement of sediment into Waters of U.S. Compliance with GPA/ZC EIR 589 Standard Condition 4.5-11 (Erosion and Sediment Control Plan (ESCP)) would satisfy this condition. The ESCP must be designed to minimize the mobilization of fine sediments into downstream waters occupied by steelhead and arroyo toad. A copy of the current ESCP shall be provided to the USACE for each project application.
- SC II.10 The permittee shall restore all temporarily impacted areas to pre-construction elevations within one month following completion of work. If wetlands or non-wetland waters of the U.S. vegetated with native wetland species were impacted, re-vegetation should commence within three months after restoration of pre-construction elevations and be completed within one growing season. If re-vegetation cannot start due to seasonal conflicts (e.g., impacts occurring in late fall/early winter should not be re-vegetated until seasonal conditions are conducive to re-vegetation), exposed earth surfaces should be stabilized immediately with jute-netting, straw matting, or other applicable best management practice to minimize any erosion from wind or water.
- SC II.12 During construction of each Planning Area or associated infrastructure, the permittee shall provide weekly construction reports via e-mail, fax, and/or mail demonstrating status of compliance with all project construction special conditions. Appropriate photos shall be submitted to show establishment of project construction minimization features.

The USACE will also require the following conditions that helps protect non-aquatic biological resources for approvals associated with SMWD projects. Even with avoidance, additional special conditions for the Santa Margarita Water District (SM SC) would be required to ensure proposed impacts are minimized to the maximum extent practicable. These special conditions include:

- SM SC I.1 The permittee shall confine infrastructure facilities to the footprint (including infrastructure alignments and facilities within designated open space) shown on Figures 8-3a, 8-3b, and 8-3c in the EIS.
- SM SC I.3 Same as SC I.C.1 for Section 401 water quality certification.
- SM SC II.2 Same as SC II.2 for restrictions on work during breeding bird nesting.
- SM SC II.3 Same as SC II.3 for grading plans.
- SM SC II.6 Same as SC II.6 for limits of grading.
- SM SC II.7 Same as SC II.7 for arroyo toad exclusion fencing.
- SM SC II.8 The permittee shall implement best management practices to prevent the movement of sediment into waters of U.S. The permittee shall develop a program-level plan to minimize the mobilization of fine sediments into downstream waters. A copy of the plan shall be provided to the Corps before issuance of the final permit.
- SM SC II.9 Same as SC II.10 for temporary impact restoration.

SM SC II.11 During work on each infrastructure project, the permittee shall provide weekly construction reports via e-mail, fax, and/or mail demonstrating status of compliance with all project construction special conditions. Appropriate photos shall be submitted to show establishment of project construction minimization features.

7.1.4.3 Level of Significance After Mitigation

The B-10 Modified Alternative would result in significant impacts to grassland, coastal sage scrub, woodland and forest, and cliff and rock. Through implementation of the GPA/ZC EIR 589 Adaptive Management Plan, impacts to grassland, coastal sage scrub, and woodland and forest would be reduced to a level of less than significant. Impacts to cliff and rock would remain a significant impact. Impacts to brodiaea would be reduced to a level of less than significant. Implementation of infrastructure associated with the B-10 Modified Alternative would result in significant impacts to nesting raptors. Significant construction impacts would be reduced to a level of less than significant. Implementation of the B-10 Modified Alternative would result in significant impacts related to invasive species. This impact would be reduced to a level of less than significant. Water quality impacts will be reduced to a level of less than significant. Through implementation of the mitigation measures adopted by the County of Orange and set forth above regarding control of lighting, this impact would be reduced to a level of less than significant. Without minimization and mitigation measures, implementation of the B-10 Modified Alternative would result in significant impacts related to human activity. Through implementation of the mitigation measures adopted by the County of Orange and set forth above, this impact would be reduced to a level of less than significant.

7.1.5 ALTERNATIVE B-12

7.1.5.1 Impacts

Impact

7.1.5.1 *The B-12 Alternative would result in significant impacts to major upland vegetation communities.*

Major Upland Vegetation Communities and Listed Non-Aquatic Species: Conservation of and Impacts to Major Upland Communities

Grassland

The B-12 Alternative would result in the conservation of a minimum of 3,129 acres of grassland habitat within the RMV Planning Area based on an overestimated impact analysis scenario (see discussion in Chapter 8.0). Because development in Planning Area 4 and 8 is limited to 550 acres (and a 175-acre water reservoir) and 500 acres, respectively, and the impact acreage in Planning Areas 6 and 7 are limited to 50 acres of new orchards, the conservation of grasslands under the B-12 Alternative is likely to increase as the exact footprint of these planning areas is defined (for instance, the impact analysis in Planning Areas 6 and 7 assume 431 acres in areas with extensive grasslands when the actual impact will be limited to 50 acres of new orchards).

With implementation of the infrastructure necessary to support the B-12 Alternative, permanent impacts to grassland would total 1,561 acres. A further 75 acres would be temporarily impacted by infrastructure facilities. Although annual grasslands are considered to have relatively low biological value when compared to native vegetation communities, they do provide habitat for

grassland species. Impacts on annual grasslands would be considered potentially significant because of the amount that would be impacted. Native grasslands are considered a sensitive vegetation community due to their limited distribution and their potential to support sensitive plant species. Impacts to native grassland are considered significant.

Coastal Sage Scrub

Under the overestimated impact analysis scenario, the B-12 Alternative would result in the conservation of 5,571 acres of coastal sage scrub, including coastal sage scrub important to the major population of California gnatcatchers within Chiquita Canyon. As noted above for grasslands, the conservation of coastal sage scrub is anticipated to increase when the limited development footprints for Planning Areas 4 and 8 are defined consistent with the development and water reservoir acreage limitations for Alternative B-12 prior to actual development. With implementation of the infrastructure necessary to support the B-12 Alternative, permanent impacts to coastal sage scrub would total 2,117 acres; an additional 43 acres would be temporarily impacted. Coastal sage scrub is considered a sensitive plant community due to its limited distribution and its potential to support sensitive plant and wildlife species such as the endangered California gnatcatcher. Impacts to coastal sage scrub are considered significant.

Woodland and Forest

Under the overestimated impact analysis scenario, the B-12 Alternative would result in the conservation of 241 acres of woodland and 404 acres of forest within the RMV Planning Area. Due to the limitations on overall development allowed within Planning Areas 4 and 8 under the B-12 Alternative, the overestimated impact scenario would be substantially refined in terms of overall impact as planning progresses for the development footprints for Planning Areas 4 and 8 consistent with the development and water reservoir acreage limitations for this alternative. With implementation of the infrastructure necessary to support the B-10 Modified Alternative, impacts to woodland and forest would increase by approximately 8 and 10 acres, respectively. Approximately six acres of woodland and forest would be temporarily impacted. Woodland and forests are considered sensitive vegetation communities because of their limited distribution and because they provide high quality wildlife habitat. Impacts to woodland and forest impacts are considered significant.

Cliff and Rock

The B-12 Alternative would result in the conservation of approximately two acres of cliff and rock habitat. Based on the location of cliff and rock habitat within the RMV Planning Area, this amount of conservation is unlikely to change based on further planning in Planning Areas 4 and 8. The B-12 Alternative would have the same impacts to cliff and rock (approximately 5 acres) as Alternative B-10 Modified. Cliff and rock is a native community that is considered relatively uncommon in the project region. Impacts on cliff and rock would be considered significant.

Non-Aquatic Species

Thread-leaved Brodiaea. The B-12 Alternative would impact 20 brodiaea locations that total 2,311 brodiaea individuals. Implementation of infrastructure necessary to support the B-12 Alternative would increase these impacts by an additional location and one individual on a permanent basis and one further location and four individuals on a temporary basis. Impacts to brodiaea are considered significant prior to the implementation of an avoidance measure for the major population on Chiquadora Ridge which would reduce the impacts by approximately 2,000 individuals.

California Gnatcatcher. As noted in Chapter 6.0, the B-12 Alternative impacts 66 locations of California gnatcatchers under the “overstated” impact scenario. Implementation of infrastructure necessary to support the B-12 Alternative would increase these impacts by 9 locations (75 total locations). The B-12 Alternative would result in impacts to gnatcatcher populations in the San Juan Creek Watershed, but these impacts are below the maximum level established in the Southern Planning Guidelines. With regard to protection of the California gnatcatcher, 298 of 349 locations (85 percent) of the *major population* in the Chiquita Canyon and Wagon Wheel sub-basins and Chiquadora Ridge portion of the Gobernadora sub-basin would be conserved. For *important populations* the proposed permanent open space would include: 14 of 15 locations (93 percent) of the East Caspers Wilderness Park *important population* (one location is mapped in the Nichols Institute property); all 40 locations of the East Coto de Caza/Starr Ranch *important population/key location*; 6 of 7 locations (86 percent) of the Trampas Canyon *important population/key location*; 11 of 13 locations of Upper Cristianitos *important population/key location*, and 28 of 41 locations (68 percent) of the Arroyo Trabuco *important population*. The two *important populations* in the Foothill/Trabuco Specific Plan Area are considered conserved due to existing regulatory limitations on “harm” to occupied sites).

Impact

7.1.5.2 *The B-12 Alternative would result in significant indirect impacts to biological resources.*

Indirect Impacts

As with the B-10 Modified Alternative, the B-12 Alternative is anticipated to cause potential indirect impacts such as noise, lighting, water quality, human activity, and invasive species. Because less development is proposed in the San Mateo Watershed, indirect impacts in this watershed are anticipated to be less than associated with the B-10 Modified Alternative.

7.1.5.2 Mitigation Program

As noted above, in conjunction with the approval of the GPA/ZC EIR 589, the County of Orange adopted a mitigation program to reduce the impacts associated with impacts on biological resources, specifically grassland, coastal sage scrub, and woodland and forest and sensitive species such as the brodiaea. This mitigation program (described above for the B-10 Modified Alternative) would apply to the B-12 Alternative.

Impacts to brodiaea would be mitigated through the dedication of open space and associated conservation of brodiaea populations (described below), implementation of the Plant Translocation Plan which is part of the GPA/ZC Adaptive Management Plan, and through the USACE conditions described under B-10 Modified and the additional conditions set forth below.

Impacts related to indirect impacts such as construction, water quality and invasive species would be mitigated via the mitigation measures and USACE conditions described previously for B-10 Modified.

USACE Special Condition

SC I.A.3 The permittee shall avoid all impacts to the thread-leaved brodiaea (a threatened facultative wetland plant) population on Chiquadora Ridge as part of construction for Planning Area 2.

7.1.5.3 Level of Significance After Mitigation

The B-12 Alternative would result in significant impacts to grassland, coastal sage scrub, woodland and forest, cliff and rock, and brodiaea. Through implementation of the GPA/ZC EIR 589 Adaptive Management Plan in conjunction with permanent protection provided through the GPA/ZC open space phased dedication program, impacts to grassland, coastal sage scrub, and woodland and forest would be reduced to a level of less than significant. Impacts to cliff and rock would remain a significant impact.

Impacts to brodiaea would be reduced to a level of less than significant through the dedication of open space and associated conservation of brodiaea populations. Implementation of the Plant Translocation Plan is part of the GPA/ZC Adaptive Management Plan and through the special condition set forth above, the location supporting 2,000 flowering stalks in the Chiquadora Ridge *major population/ key location* would be conserved. Four smaller populations totaling about 85 flowering stalks would be developed as a result of construction in Planning Area 2. The *major population/key location* located in southern Cristianitos/Gabino Canyons would be 100 percent conserved, and the Arroyo Trabuco *important population* would be conserved.

Implementation of infrastructure associated with the B-12 Alternative could potentially result in significant impacts to nesting raptors. Implementation of mitigation measures specifying avoidance of active nesting sites would reduce construction impacts to a level of less than significant.

Implementation of the B-12 Alternative would potentially result in significant impacts related to invasive species. With mitigation measures specifying prohibitions on planting invasive species within development areas and implementation of the Invasive Species Control Plan in conjunction with the Aquatic Resources Adaptive Management Program, and the USACE condition noted previously this impact would be reduced to a level of less than significant.

Through implementation of the mitigation measures adopted by the County of Orange and USACE conditions set forth above and as further reviewed in subchapter 8.5, water quality impacts will be reduced to a level of less than significant.

Through implementation of the mitigation measures adopted by the County of Orange and set forth above regarding control of lighting, this potential indirect impact would be reduced to a level of less than significant. Without minimization and mitigation measures addressing human activity within the ARCA and other RMV Planning Area open space, implementation of the B-12 Alternative would potentially result in significant impacts related to human activity. Through implementation of the mitigation measures adopted by the County of Orange and set forth above, this impact would be reduced to a level of less than significant.

7.1.6 ALTERNATIVE A-4

7.1.6.1 Impacts

As previously described, Alternative A-4 would provide the same level of development as for Alternative B-10 Modified. However, because Alternative A-4 assumes the processing of USACE wetlands permits on a project-by-project basis, this incremental approach may not result in the same level of avoidance and minimization as would occur with the B-10 Modified Alternative.

7.1.6.2 Mitigation Program

Because the Alternative A-4 would provide the same level of development as the B-10 Modified Alternative, the mitigation program described above for B-10 Modified would apply to Alternative A-4.

7.1.6.3 Level of Significance After Mitigation

The level of significance after mitigation for Alternative A-4 would be as described above for Alternative B-10 Modified, except that incremental permitting may not achieve a level of avoidance and minimization comparable to the B-10 Modified due to comprehensive planning limitations inherent in incremental permitting.

7.1.7 ALTERNATIVE A-5

7.1.7.1 Impacts

Major Upland Vegetation Communities and Listed Non-Aquatic Species

As the “no impact to regulated waters” and “no take of listed species alternative,” Alternative A-5 would not result in impacts to listed species. Therefore, no significant direct impacts would occur. However, the absence of long-term management measures such as invasive species controls and the Gobernadora Multipurpose Basin, the lack of adequate buffers and limited habitat connectivity would result in the continuation of existing adverse impacts. In addition, as noted in Chapter 6.0, while this alternative would not result in impacts to regulated waters, it would not necessarily achieve larger watershed protection goals particularly in uplands headwaters and contributing drainages due to the absence of comprehensive buffers and limited habitat connectivity. Therefore, under the Alternative A-5 scenario, there would be a net loss of acreage and functions through indirect effects such as lack of ecologically meaningful buffers, decreased sediment production through development of sandy areas, and development within headwater areas.

Impact

7.1.7.1 *Alternative A-5 would result in significant indirect impacts to biological resources.*

Indirect Impacts

Due to the absence of buffers and other measures required for consistency with the SAMP Tenets and the Watershed Planning Principles, indirect impacts for this alternative would be greater in nature and scope than described for the B-10 Modified and B-12 Alternatives. Potentially significant indirect impacts would occur.

7.1.7.2 Mitigation Program

The mitigation program set forth for indirect impacts related to Alternative B-10 Modified would also apply to Alternative A-5.

7.1.7.3 Level of Significance After Mitigation

Significant non-aquatic resource areas would be avoided. Because of the absence of impacts creating a regulatory nexus justifying open space dedications, open space areas outside of proposed development areas may not have permanent use restrictions. As a consequence, while these areas would be “avoided,” they would not be protected because future land use

entitlements could be requested by a private landowner. Given the low density of housing and the County's overall housing goals reflected in OCP-2004, such a scenario could occur. As previously noted, comprehensive non-aquatic resource restoration would not be undertaken. Additionally, two non-USACE jurisdictional areas important to maintaining and restoring long-term hydrologic/terrains resources—the side canyons of middle Chiquita and the non-wetlands areas adjoining Gobernadora Creek—would not be protected under this alternative scenario. Finally, this alternative would not provide adequate buffers, would allow development in non-jurisdictional headwaters areas, and would not provide a level of wildlife habitat connectivity comparable to the B-10 Modified and B-12 Alternatives.