

SAN JUAN WATERSHED PROJECT

Final Environmental Impact Report
State Clearinghouse No. 2016121001

Governor's Office of Planning & Research

MAY 24 2019

STATE CLEARINGHOUSE

Prepared for
Santa Margarita Water District

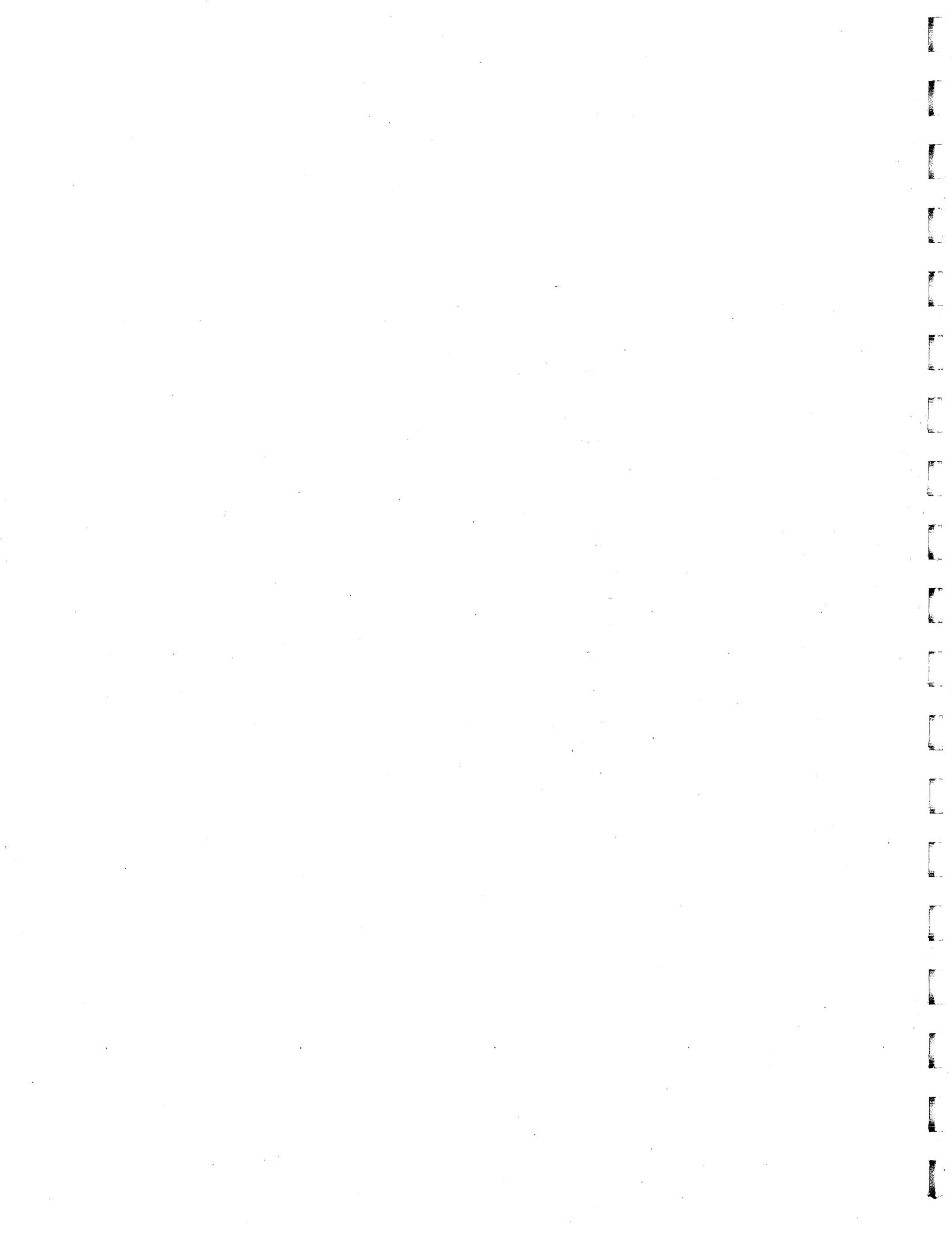
May 2019

Prepared by
Environmental Science Associates



Santa Margarita
Water District





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CHAPTER 9

Introduction to Final Program EIR

This Final Program Environmental Impact Report (EIR) has been prepared in accordance with the California Environmental Quality Act (CEQA) as amended (Public Resources Code Section 21000 et seq.) and *CEQA Guidelines* (California Administrative Code Section 15000 et seq.). The proposed project addressed in this Final Program EIR is the San Juan Watershed Project, where the lead agency is the Santa Margarita Water District (SMWD).

9.1 CEQA Requirements

Before SMWD may approve the project, it must certify that the Final Program EIR: a) has been completed in compliance with CEQA; b) was presented to the SMWD Board of Directors who reviewed and considered it prior to approving the project; and c) reflects SMWD's independent judgment and analysis.

CEQA Guidelines Section 15132 specifies that the Final Program EIR shall consist of the following:

- The Draft Program EIR or a revision of that draft;
- Comments and recommendations received on the Draft Program EIR;
- A list of persons, organizations, and public agencies commenting on the Draft Program EIR;
- The response of the Lead Agency to significant environmental points raised in the review and consultation process; and
- Any other information added by the Lead Agency.

This Final Program EIR for the San Juan Watershed Project presents the following chapters as a continuation of those included in the Draft Program EIR:

- Chapter 9: Introduction and CEQA process
- Chapter 10: A list of persons, organizations, and public agencies commenting on the Draft Program EIR, and the written comments received on the Draft Program EIR
- Chapter 11: Written responses to each comment identified in Chapter 10
- Chapter 12: Revisions made to the Draft Program EIR in response to comments received or initiated by the Lead Agency

9.2 CEQA Process

Public Participation Process

Notice of Preparation and Public Scoping

In accordance with Section 15082 of the *CEQA Guidelines*, a Notice of Preparation (NOP) of a Program EIR was prepared and circulated for review by applicable local, State and federal agencies and the public. The 63-day project scoping period, which began with the distribution of the NOP on December 1, 2016, and remained open through February 2, 2017. The NOP provided the public and interested public agencies with the opportunity to review the proposed project and to provide comments or concerns on the scope and content of the environmental review document including: the range of actions; alternatives; mitigation measures, and significant effects to be analyzed in depth in the Draft Program EIR.

Notice of Availability of the Draft Program EIR

The Notice of Availability (NOA) of the Draft Program EIR was posted on December 21, 2017 with the County Clerk in Orange County. The Draft Program EIR was circulated for public review until February 23, 2018. The Draft Program EIR was circulated to federal, state, and local agencies and interested parties requesting a copy of the Draft Program EIR. In addition, the NOA of the Draft Program EIR was posted in the Orange County Register Newspaper in December, 2017. Copies of the Draft Program EIR were made available to the public at the following locations:

- Santa Margarita Water District Office, 26111 Antonio Parkway, Rancho Santa Margarita, CA 92688)
- San Juan Watershed Project Web Site (<http://www.sanjuanwatershed.com>)
- San Juan Capistrano Library, 31495 El Camino Real, San Juan Capistrano, CA 92675
- Dana Point Library, 33841 Niguel Road, Dana Point, CA 92629

Evaluation and Response to Comments

CEQA Guidelines Section 15088 requires SMWD, as the Lead Agency, to evaluate comments on environmental issues received from parties that have reviewed the Draft Program EIR and to prepare a written response. The written responses to commenting public agencies shall be provided at least ten (10) days prior to the certification of the Draft Program EIR (*CEQA Guidelines* §15088(b)).

Final Program EIR Certification and Approval

As the Lead Agency, SMWD has the option to make the Final Program EIR available for public review prior to considering the project for approval (*CEQA Guidelines* §15089(b)). Prior to considering the project for approval, SMWD, as the Lead Agency, will review and consider the information presented in the Final Program EIR and will certify that the Final Program EIR:

- (a) Has been completed in compliance with CEQA;
- (b) Has been presented to the Board of Directors as the decision-making body for the Lead Agency, which reviewed and considered it prior to approving the project; and
- (c) Reflects SMWD's independent judgment and analysis.

Once the Final Program EIR is certified, SMWD's Board of Directors may proceed to consider project approval (*CEQA Guidelines* §15090). Prior to approving the proposed project, SMWD must make written findings and adopt statements of overriding considerations for each unmitigated significant environmental effect identified in the Final Program EIR in accordance with Sections 15091 and 15093 of the *CEQA Guidelines*.

Notice of Determination

Pursuant to Section 15094 of the *CEQA Guidelines*, SMWD will file a Notice of Determination (NOD) with the Office of Planning and Research and Orange County Clerk within five working days of project approval.



CHAPTER 10

Comment Letters

The Draft Program Environmental Impact Report (EIR) for the San Juan Watershed Project (proposed project) was circulated for public review for 45 days (December 21, 2017 through February 23, 2018) in accordance with the requirements of *CEQA Guidelines* Section 15105(a). The Santa Margarita Water District (SMWD) received 21 comment letters during the public review period, which are listed in **Table 10-1** and included within this chapter. The letters have been marked with brackets that delineate comments pertaining to environmental issues and the information and analysis contained in the Draft S-Program EIR. Responses to such comments are provided in Chapter 11.

Table 10-1
Comment Letters Received

Comment No.	Commenting Agency	Date of Comment
A – Agency/Tribal Government		
A1	Office of Planning and Research	March 14, 2018
A2	National Marine Fisheries Service	February 21, 2018
A3	United States Fish and Wildlife Service	February 27, 2018
A4	California Department of Toxic Substances Control	January 17, 2018
A5	California Department of Parks and Recreation	February 23, 2018
A6	State Water Resources Control Board	February 23, 2018
A7	California Department of Fish and Wildlife	March 5, 2018
A8	Orange County Department of Public Works	February 20, 2018
A9	Orange County Transportation Authority	February 22, 2018
A10	South Coast Water District	February 22, 2018
A11	South Orange County Wastewater Authority	February 22, 2018
A12	San Juan Basin Authority	February 23, 2018
A13	City of San Clemente	February 26, 2018
B – Organizations/Community Groups		
B1	California Cultural Resource Preservation Alliance	January 5, 2018
B2	California Trout	February 23, 2018
B3	Orange County Coastkeeper	February 22, 2018
C – Individuals		
C1	Mike & Susan Thompson, Bill & Linda Lane, Tracy & Ann Lewis, Phyllis Tucker, Gerhard & Lynn Jurinek, Mark & Paula Torriani	February 16, 2018
C2	Richard Gardner	February 22, 2018



Comment Letter A1

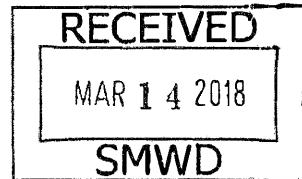


STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR



March 6, 2018



KEN ALEX
DIRECTOR

Don Bunts
Santa Margarita Water District
26111 Antonio Parkway
Las Flores, CA 92688

Subject: San Juan Watershed Project
SCH#: 2016121001

Dear Don Bunts:

The enclosed comment (s) on your Draft EIR was (were) received by the State Clearinghouse after the end of the state review period, which closed on February 23, 2018. We are forwarding these comments to you because they provide information or raise issues that should be addressed in your final environmental document.

The California Environmental Quality Act does not require Lead Agencies to respond to late comments. However, we encourage you to incorporate these additional comments into your final environmental document and to consider them prior to taking final action on the proposed project.

A1-1

Please contact the State Clearinghouse at (916) 445-0613 if you have any questions concerning the environmental review process. If you have a question regarding the above-named project, please refer to the ten-digit State Clearinghouse number (2016121001) when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Comment Letter A1



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

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



March 5, 2018

late 2/23/18
Secretary's Office of Planning & Research

Mr. Tom Barnes
Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, California 90017
Tbarnes@esassoc.com

MAR 05 2018

STATE CLEARINGHOUSE

Subject: Comments on the Draft Program Environmental Impact Report for the San Juan Watershed Project, Orange County, CA (SCH# 2016121001)

Dear Mr. Barnes:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced San Juan Watershed Project Draft Program Environmental Impact Report (PEIR), dated December 2017. The Department provided comments on the Notice of Preparation (NOP) for the project in a letter dated February 1, 2017. The Department appreciates the Santa Margarita Water District (SMWD) granting a time extension until March 7, 2018, to provide comments on this document¹. The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act, [CEQA] Guidelines §15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (Fish and Game Code § 2050 et seq.) and Fish and Game Code (FGC) section 1600 et seq. The Department also administers the Natural Community Conservation Planning program.

The San Juan Watershed Project (project) would implement an integrated water resources management plan intended to maximize beneficial uses of the San Juan Groundwater Basin. The project would increase the capture and storage of urban runoff and stormwater, optimize the use of recycled water for beneficial reuse, minimize the potential for undesirable impacts, and augment local water supplies to reduce the region's dependence on imported water. The project would be constructed in multiple phases. Phase I would construct and operate three inflatable rubber dams within San Juan Creek, located in the City of San Juan Capistrano and the County of Orange, to provide groundwater recharge of stormwater that would otherwise flow to the ocean. During storm events the rubber dams would remain inflated, provided the flow in the channel remains less than 1-foot greater than the rubber dam crest. The dams would deflate when this is exceeded and re-inflate when the flow in the channel is reduced. Subsequent phases, which are not analyzed in the draft PEIR, would construct additional rubber dams in undisclosed locations within San Juan Creek.

Our primary concerns regarding the draft PEIR include the adequacy of analysis of project impacts under CEQA and potential species impacts. Specifically, we are concerned about the movement of southern California steelhead (steelhead; *Oncorhynchus mykiss*, a species listed as endangered under the federal Endangered Species Act [ESA]), tidewater goby

¹ Extension granted by Mr. Don Bunts, Chief Engineer, Santa Margarita Water District, on February 4, 2018.

Comment Letter A1

Mr. Tom Barnes
Environmental Science Associates
March 5, 2018
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(*Eucyclogobius newberryi*, listed endangered under ESA), and Pacific lamprey (*Lampetra tridentata*; a California and federal species of special concern), and other aquatic species. We offer the following comments and recommendations to assist the SMWD in avoiding or minimizing potential project impacts on biological resources.

1. The SMWD published the Department's letter, "Comments on the Notice of Preparation of a Draft Environmental Impact Report for the San Juan Watershed Project, Orange County, CA (SCH#2016121001)," in Appendix A of the draft PEIR; however, SMWD did not address our comments, neither in the body of the draft PEIR nor as annotations in Appendix A. The Department remains concerned that the draft PEIR did not take into account the recommendations and observations provided in our NOP comments for this project. We are especially concerned that, as stated in the above-referenced letter, project activities are not in compliance with the FGC. Section 5901 of the FGC states that, "except as otherwise provided in this code, it is unlawful to construct or maintain in any stream in Districts [4], any device or contrivances that prevents, impedes, or tends to prevent or impede, the passing of fish up and down stream." Given that the project area is in District 4 (FGC § 11010; see attached map), the final PEIR should provide a thorough analysis of project activities with regard to this section, as well as a discussion as to whether project activities are misaligned with this or any other section of the FGC, with special consideration given to Chapter 3, Articles 1-5.
2. The Department requests further clarification as to how the draft PEIR concluded that cumulative impacts of the project on biological resources would be less than significant with mitigation. The draft PEIR analyzes Phase 1 of construction, which includes the installation of three rubber dams in San Juan Creek. Subsequent phases would construct up to a total of 12 dams in undisclosed locations within San Juan Creek (PEIR 2-20). Analysis of construction activities outside of Phase 1 is not provided, beyond the statement in the Cumulative Impacts section that, "during the subsequent phases, implementation of these same measures as well as BIO-3 and BIO-6 would reduce potential impacts to special-status species, sensitive vegetation communities, state- and federally-regulated waters, wildlife movement, and local plans, policies, and ordinances to less than significant" (PEIR 4-13). Without locations for subsequent infrastructure, it is unclear how it was concluded that the whole of the project's cumulative impacts will be less than significant with mitigation.

The Department has further concerns that FGC section 5937 was not considered while analyzing cumulative impacts. This section states that, "the owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam." Without the disclosure of the locations of the dams to be installed in other phases of this project, it is not clear how project activities will or will not comply with FGC section 5937, and therefore the Department recommends that the final PEIR be amended to include a thorough and specific discussion of this section of the FGC.

Additionally, the Cumulative Impacts section briefly states that, "...drop structures within the channels that are currently acting as fish passage barriers may be removed or modified to allow for increased passage. The proposed project would maintain sufficient fish passage opportunities in the event that the upstream impediments are removed" (PEIR 4-13). Planning efforts in the past 5 to 10 years have led to several barrier removals in the mid and

Mr. Tom Barnes
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upper watershed in San Juan, Trabuco, and Holy Jim Creeks. The United States Forest Service has removed 18 of 79 instream check dams since 2014 and plans to remove 25 in 2018 and the remainder in 2019. It is not directly explained how the mitigation measures for the subsequent phases, which are not described in the draft PEIR, would ensure that impacts to the entire watershed would be less than significant given these ongoing projects.

A cumulative impacts discussion, "...should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact" (CEQA Guidelines §15130[b]). The PEIR lacks information regarding activities and mitigation beyond Phase 1, discussion regarding FGC section 5937, and analysis of the many projects that are intended to improve fish passage in San Juan Creek. The final PEIR should include expanded analysis and discussion of the additional phases of the project, mitigation associated with those phases, and how all phases will or will not impact future projects to improve steelhead passage in San Juan Creek. How the project's cumulative impacts intersect with FGC should also be discussed at length.

3. The draft PEIR discusses five alternatives to the proposed project, two rejected alternatives and three considered alternatives, which analyze impacts of various degrees of infrastructure in San Juan Creek. The Department disagrees with the rejection of the Off-Stream Storage and Recharge Alternative as described in the draft PEIR (pages 5-3 and 5-4). The discussion presented does not appear to have explored injection wells as a means to increase the volume of water in the aquifer, but rather used passive filtration as the principal method. The Department would like to emphasize that the impacts to aquatic biological resources associated with off-channel storage are far fewer than the ongoing impacts of the Preferred Alternative, and that the Off-Stream Storage and Recharge Alternative does not conflict with FGC Chapter 3, Articles 1-5 (see Comment 1).

Furthermore, the analysis of this rejected alternative was "...evaluated during the SJBA Foundational Actions Fund (FAF) study" (PEIR 5-4). No further reference, citation, or discussion of this document is made, nor is the document available in the draft PEIR. The study should be incorporated by reference and made available, per CEQA Guidelines section 15150. Without access to this study, the Department cannot determine whether analysis of this alternative was appropriate to the procedural and substantive requirements of CEQA. Alternatives are to include an "alternative [that] would impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Guidelines §15126.6[b]), and, "the range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making" (CEQA Guidelines §15126.6[f]). The Department strongly recommends that an alternative design such as the Off-Stream Storage and Recharge Alternative, which clearly demonstrates avoidance and minimization of impacts to associated species to the maximum extent practicable (CEQA Guidelines §15021[a][2]), be reconsidered. We also request that the SJBA FAF study be made available as part of Appendix C: Biological Technical Report of the final PEIR.

4. The Department has further concerns regarding mitigation measure BIO-5, which states,

"The Santa Margarita Water District (SMWD) shall coordinate with NMFS [the National Marine Fisheries Service] and OCPW [Orange County Public Works] to participate in

Mr. Tom Barnes
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steelhead habitat restoration priorities within the San Juan Creek watershed. Participation may include implementation of in-channel fish passage improvements within San Juan Creek and mutually agreed upon funding and/or planning assistance commensurate with SMWD's level of effect to assist the resource agencies with the Steelhead Core 1 Recovery Population goals. These migratory passage improvements implemented with assistance from SMWD would result in increased migration days within San Juan Creek and Arroyo Trabuco compared to modeled existing conditions" (PEIR ES-7).

Mitigation measures "...must be fully enforceable through permit conditions, agreements, or other legally binding instruments" (CEQA Guidelines §15126.4[2]). Without a firm, specific, written commitment to participation, planning, and/or the execution of a financial instrument to develop and remediate existing fish passage barriers within the watershed, the Department concludes that this mitigation measure does not bring impacts of project activities on aquatic species below a significant level. In order to for BIO-5 to be effective, we recommend that the mitigation measure be rewritten to include specific, enforceable actions and commitments to steelhead habitat restoration, described in as much detail as possible. We also request that the Department be included in the measure, along with NMFS and OCPW, regarding consultation on restoration efforts.

Species Impacts

5. The Department remains concerned regarding the following factors pertaining to the impacts of the project on steelhead passage, the analysis provided, and the mitigation proposed to reduce those impacts:
 - a. the draft PEIR states that, "the minimum passable flow depth for adult steelhead in flow-through cross sections where leaping was not required was established at 0.5 foot, consistent with the Trabuco Creek steelhead barrier assessment (HDR, Inc., 2015)" (Biological Technical Report, Appendix D, page 7). The Department is unclear as to why this minimum passable flow was used, given 0.8 foot or 9.6 inches is standard for adult passage, per Department Instream Flow requirements (Taylor and Ross, 2010). The use of an incorrect standard may erroneously skew the potential impact of the project on steelhead passage;
 - b. there is no discussion in the draft PEIR of potential jump heights that steelhead and other aquatic species would have to navigate in order to pass over the rock riprap, the stilling basin, or the inflated and deflated dam at each location. The Department and NMFS require 0.5 foot for juvenile salmonids and 1.0 foot clearance for adult salmonids;
 - c. the impact of stress and delayed migration, which is caused when salmonids are required to navigate over multiple dams and/or through multiple fish ladders in a system known to be "flashy" is not discussed in the Biological Technical Report; and
 - d. the proposed design for the fish ladder at each site does not include enough detail to determine if it will be adequate to provide for passage of adults and juvenile steelhead. The Department requests that the final Biological Technical Report be amended to include the following information regarding fish ladder design:

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March 5, 2018
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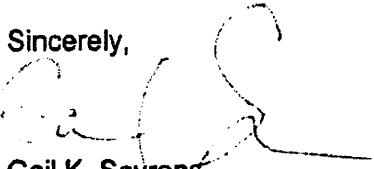
- i. examples of where this design is currently installed and functioning to pass salmonids;
- ii. the flow conditions under which this design will function appropriately; and
- iii. information on how debris will be prevented from entering the ladder or how debris that becomes trapped in the fish ladder will be removed during the migration events. We are especially concerned about this because generally, once the flows are passable for fish, it is unsafe for people to dislodge debris.

The Department recommends that these factors be thoroughly analyzed and discussed in the final PEIR and Biological Technical report, in order to ensure that impacts of the project on steelhead passage are less than significant with the proposed mitigation.

6. The draft PEIR does not analyze impacts to Pacific lamprey independently from other aquatic species. There is neither mention of the potential impacts to adult and juvenile Pacific lamprey relative to its habitat, water quality, or passage needs, nor were passage requirements for this species discussed. The passage needs of Pacific lamprey are significantly different from steelhead and other aquatic wildlife resources and should be discussed independently. The Department is concerned that without additional analysis and mitigation, project activities could impede or prevent the recovery of this species. We therefore recommend that the final PEIR be amended to include an analysis and discussion of the impacts of the project on Pacific lamprey independently of steelhead and other aquatic species, and that additional mitigation measures be incorporated if appropriate.

We appreciate the opportunity to comment on the draft PEIR for this project and to assist the SMWD in further minimizing and mitigating project impacts to biological resources. We request that a written response our comments be provided in the final PEIR, as required per CEQA Guidelines section 15088(d). If you have any questions or comments regarding this letter, please contact Jennifer Turner, Environmental Scientist, at (858) 467-2717 or jennifer.turner@wildlife.ca.gov, or Mary Larson, Steelhead Restoration and Recovery Unit Coordinator, at (562) 342-7186 or mary.larson@wildlife.ca.gov.

Sincerely,



Gail K. Sevrens
Environmental Program Manager
South Coast Region

Enclosure: Fish and Game (Wildlife) District Map

cc: Rich Burg, Department of Fish and Wildlife
Ahmad Kashkoli, State Water Resources Control Board
Brittany Struck, National Marine Fisheries Service
Christine Medak, U.S. Fish and Wildlife Service
Daniel Swenson, U.S. Army Corps of Engineers, Los Angeles District
Scott Morgan, State Clearinghouse

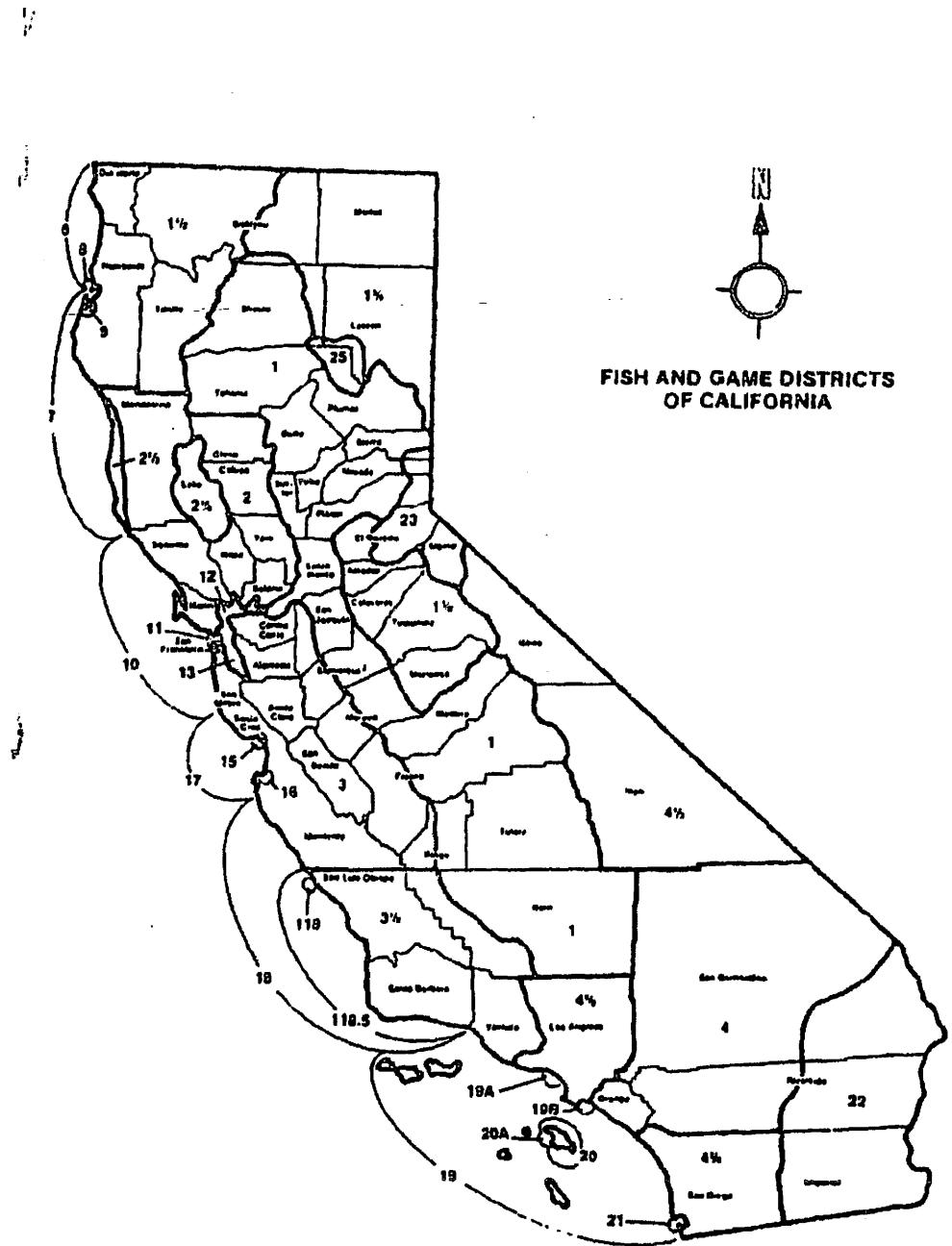
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Environmental Science Associates
March 5, 2018
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Literature Cited

**Taylor, Ross N. and M. Love. 2010. California Salmonid Stream Habitat Restoration Manual, V. 2, 4th ed., p. IX-42. Prepared by the California Department of Fish and Game.
(<http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp>)**

Fish and Game Maps



Comment Letter A2



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213

February 21, 2018

Tom Barnes
Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Dear Mr. Barnes:

Enclosed with this letter are the National Marine Fisheries Service's (NMFS) comments on the Draft Program Environmental Impact Report (DEIR) for the San Juan Watershed Project (Project). In accordance with California Environmental Quality Act regulations (14 CCR § 15151), the enclosed comments highlight where the DEIR is inadequate for disclosing the Project effects on endangered steelhead (*Oncorhynchus mykiss*) and habitat for this species.

On February 8, 2018, NMFS attended a meeting with the Santa Margarita Water District (District) to receive an update on the Project status. During this meeting, NMFS suggested that neither the rubber-dam design nor operation should reduce migration opportunities for steelhead. In addition, NMFS suggested that the entirety of the District's proposed Project, including the construction, operation, and maintenance of all 12 rubber dams, and other interrelated and interdependent activities, should be provided to NMFS for the purpose of supporting the future Section 7 formal consultation under the Endangered Species Act (ESA). Segmenting the broader action into smaller parts, and then initiating consultation on a segmented part, would be inconsistent with Section 7 of the ESA and its implementing regulations.

A2-1

NMFS appreciates the opportunity to review and comment on the DEIR. Please contact Brittany Struck at (562) 432-3905 or via email at Brittany.Struck@noaa.gov if you have a question concerning this letter or enclosed comments.

Sincerely,

Anthony P. Spina
Chief, Southern California Branch
California Coastal Office

Enclosure

cc: Jonathan Snyder, U.S. Fish and Wildlife Service, Carlsbad
Mary Larson, California Department of Fish and Wildlife, Los Alamitos
Daniel Swenson, U.S. Army Corps of Engineers, Los Angeles District
Administrative File: 151422WCR2016CC00390



NOAA's National Marine Fisheries Service (NMFS) Comments on the Santa Margarita Water District's (District) Draft Program Environmental Impact Report (DEIR) for the San Juan Watershed Project (Project)

February 21, 2018

Overall, the content of the DEIR does not allow NMFS to develop a clear understanding of the manner in which the Project may affect endangered steelhead and available habitat for this species, the amount, extent and duration of adverse impacts, and the implications of these impacts for survival and recovery of steelhead in the San Juan Creek watershed. The DEIR does not meet the California Environmental Quality Act (CEQA) criterion for adequacy and full disclosure in the context of significant, environmental issues.

The District should revise the DEIR to disclose that operation of rubber dams is likely to strand steelhead. If stranding is unavoidable, then the DEIR should be revised to include measures to minimize the likelihood of stranding and related potential consequences. Further, mitigation measure BIO-5 should include detailed performance objectives and details on commitment level and type of participation/assistance (e.g., time, expertise, finances) in planning, design, and implementing steelhead passage-improvement projects in the San Juan Creek watershed. Also, the DEIR should include an explanation regarding the degree of funding and/or planning assistance necessary to meet the threshold of "commensurate with SMWD's level of effect..." (ES-7). The DEIR should be revised to include a description of how the District's level of effect would be measured and evaluated.

The DEIR's description of impacts to surface water (e.g., magnitude, extent, duration of habitat connectivity throughout the Project site) is inadequate to develop a clear understanding of the effects. For example, under the minimum scenario as described in Table 3.8-4 (page 3.8-22), the DEIR should be revised to include a discussion regarding the effects on surface water given an anticipated reduction from 29 to 0 (AFY) in groundwater outflow to the ocean owing to the proposed Project. The final EIR should incorporate tables, figures, and additional content that not only describe impacts but also includes a discussion on physical and biological consequences of the impacts to endangered steelhead and available habitat (i.e., surface water).

The disclosure of effects to endangered steelhead from the proposed Adaptive Pumping Management Plan is currently lacking. In this regard, the final EIR should include the following elements: (1) a framework and process for evaluating and meaningfully describing how operations are expected to influence the magnitude, extent, and quality of available surfacewater and other habitat elements throughout the duration of the Project, (2) a monitoring schedule for parameters such as surface-water depths, (3) water-quality criteria protective of endangered steelhead, and (4) a response plan when actual (future) habitat conditions do not align with expected conditions as characterized by the DEIR (i.e., deviations from predicted or anticipated habitat quality or quantity conditions).

The DEIR (Appendix C, page 49) describes the expected development of ponding or pools on the upstream side of the rubber dams. These ponded areas are likely to attract invasive species and predators that can impact rearing steelhead. Despite the vaguely described duration of

A2-2

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ponded areas to be “months” (Appendix C, page 51), these extended instream conditions may support invasive species on a continual basis. The final EIR should include a discussion about invasive species infiltrating the ponded areas and the potential impacts of these species on endangered steelhead.

Because the DEIR explains, “The proposed Phase 1 rubber dams would impede and dissipate flows within San Juan Creek (page 3.8-26),” and given the DEIR lacks a meaningful objective to ensure safe passage for endangered steelhead, the final EIR should disclose impacts and related consequences to the migratory behavior and ecology of endangered steelhead. We emphasize that disclosure in the current DEIR is often confined to discussion of the impacts, with no consideration of the related consequences due to the impacts. This renders the DEIR inadequate because the impacts are not an end in and of themselves; rather, the impacts are likely to generate additional effects and related consequences to endangered steelhead and habitat for this species, which are not disclosed. Therefore, the final EIR should include a discussion of the effects and ultimate consequences due to each impact.

The DEIR should disclose effects of the rubber dams and their operation on migration opportunities for steelhead. In this regard, the final EIR should describe: (1) the expected alterations to river hydraulics (e.g., depth, velocity, turbulence) from each dam when deflated and when inflated, over a range of flows, including hydraulic conditions across the footprint of each dam and throughout the area ponded by each dam (see NMFS’ January 17, 2017, and October 6, 2017, letters), (2) hydraulics of proposed fishways over a range of flows, and (3) the anticipated effects of these on migration and movement of endangered steelhead.

The existing description of cumulative effects¹ in regard to endangered steelhead and habitat is inadequate because the description does not provide a sufficiently clear understanding of the amount, extent, location, duration and type of cumulative effects that are expected. The final EIR should include the following: (1) Project impacts to the lagoon itself such as area, shape, vegetation, and depth based on an evaluation of cumulative effects to the lagoon given the proposed Doheny Ocean Desalination project may result in impacts to lagoon water-surface elevation, and (2) duration of delay during steelhead migration while the species attempts to maneuver past each rubber dam based on an evaluation of cumulative effects to the species given that Orange County Public Works maintains existing drop structures and is proposing additional structures within the same footprint of the Project.

The DEIR is inadequate because it lacks information to allow an understanding of how the rubber dams would impact endangered steelhead and habitat for this species. Therefore, the final EIR should include:

- Effects of operating and maintaining rubber dams on steelhead passage (Appendix D, page 1) and migratory behavior (e.g., time and energy required for juvenile and adult steelhead to approach, navigate, and pass all proposed dams). This discussion needs to explain: (1) how the fishway design, configuration, and operation incorporate passage

¹ Under CEQA regulations, this analysis may rely on considerations of past, present, or probable future projects producing related or cumulative effects, including projects outside the agency’s control, or may rely on projections of future effects contained in specified plans (Id. at § 15130, subd. (b)(1)(A)).

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requirements for juvenile and adult steelhead given migration seasons of two different life stages, (2) possible passage problems such as excessive water velocities or turbulence, excessive drop heights, lack of water depth, and debris accumulation, and (3) how the Project alters both winter and spring discharge through the Project area in general and through each dam and fishway in particular.

- A description of the “certain storm event” that would trigger full deflation of the dams in addition to any other scenario or criterion that would trigger deflation (i.e., an operation and maintenance schedule).
- A procedure for measuring and detecting spatial and temporal changes in habitat quality and quantity as a result of operating and maintaining rubber dams.
- A protocol that will track performance of mitigation measures, respond to new information or changing conditions, and detect and reconcile deficiencies or problems in a timely manner.

A2-12

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A2-15



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services

Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, California 92008



In Reply Refer To:

FWS-OR-17B0093-18CPA0141

February 27, 2018
Sent by Email

Tom Barnes
Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, California 90017

Subject: Draft Environmental Impact Report for the Proposed San Juan Watershed Project,
Orange County, California

Dear Mr. Barnes:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Report (DEIR) for the proposed San Juan Watershed Project in southern Orange County, California.

The Santa Margarita Water District and the South Coast Water District (collectively, project proponents) propose to develop facilities to manage surface water resources and to enhance groundwater resources of the San Juan Basin. The project will be constructed in multiple phases. Phase 1 of the project includes the installation of three rubber dams in a channelized section of San Juan Creek, downstream from the Interstate 5 Bridge, and upgrades to the City of San Juan Capistrano (CSJC) Groundwater Recovery Plant (GWRP) to improve the efficiency of existing water treatment processes. Subsequent phases may include the installation of additional rubber dams in San Juan and Arroyo Trabuco Creeks, recycled water pipelines, groundwater extraction wells, additional upgrades to the CSJC GWRP and upgrades to the South Coast Water District GWRP. Phase 1 of the project is assessed at the project level in the DEIR. Subsequent phases are assessed at a programmatic level because they are largely conceptual.

A3-1

The primary concern and mandate of the Service is the protection of public fish and wildlife resources and their habitats. The Service has legal responsibility for the welfare of migratory birds, anadromous fish, and endangered animals and plants occurring in the United States. Specifically, the Service administers the Endangered Species Act (Act) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*), and provides support to other Federal agencies in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*).

The San Juan Creek Watershed is ecologically significant because it is one of the only remaining large watersheds in southern California that is not substantially impeded by dams and thus retains the natural flows and associated processes necessary to support native aquatic resources along the

A3-2

Mr. Tom Barnes (FWS-OR-17B0093-18CPA0141)

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majority of its length. A natural lagoon still forms at the river mouth and is identified as a potential reintroduction site for the federally endangered tidewater goby (*Eucyclogobius newberryi*) within its historic range in southern California (Service 2005). Southern tidewater goby have recently been identified as a separate species (Swift *et al.* 2016) that is currently known to occupy only five lagoons, all on Camp Pendleton (Marine Taxonomic Services 2017). As discussed in the DEIR, San Juan Creek is also considered by the National Marine Fisheries Service (NMFS) as integral to recovery of southern California steelhead (*Oncorhynchus mykiss*; steelhead). Efforts have been underway by local stakeholders for many years to remove existing barriers and improve opportunities for recovery of steelhead in San Juan Creek,¹ and the Service supports these ongoing efforts (e.g., Service 2007). San Juan Creek, including the project area, is also one of only six² remaining streams that support arroyo chub (*Gila orcuttii*) within its native range (CNDDDB 2018). All three of these native fish species have been eliminated from significant portions of their range as a result of flood control and water conservation operations in Southern California.

A3-2

Portions of San Juan and Arroyo Trabuco Creeks are located within the Habitat Reserve established under the Southern Orange County Subregion Habitat Conservation Plan (Southern Orange HCP), and Santa Margarita Water District is a permittee under the Southern Orange HCP. Changes to hydrology and water quality associated with implementation of the Southern Orange HCP were anticipated to be controlled through implementation of Water Quality Management Plans (WQMPs) for each development Planning Area within the Southern Subregion (Southern Orange HCP, Appendix K) and the San Juan Creek and Western San Mateo Creek Watershed Special Area Management Plan (SAMP; Corps 2005). The WQMPs will be implemented, such that “hydrologic conditions of concern” and “pollutants of concern” (as defined by the San Diego Regional Water Quality Control Board) are monitored and corrected as necessary to generally maintain baseline flow and water quality conditions following development of the Planning Areas. In addition, the U.S. Army Corps of Engineers (Corps) requires that specific channel geomorphologic and hydrologic conditions are maintained in the watershed as part of the SAMP. Thus, significant changes to the frequency, magnitude and quality of surface flows in San Juan Creek due to development upstream from the proposed project area not anticipated.

A3-3

We provided comments on the Notice of Preparation of the DEIR on February 2, 2017 (FWS-OR-17B0093-17CPA0078) and met with the project proponents and staff from the NMFS on September 14, 2017, to discuss the proposed project and share our preliminary concerns. We appreciate the opportunity for early coordination on the project in preparation for a future potential section 7 consultation; however, we remain concerned that the proposed changes in hydrology and associated impacts to biological resources are not adequately considered or addressed in the DEIR. We recommend the project proponents consider alternatives to the proposed project that

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¹ <https://fws.maps.arcgis.com/apps/Cascade/index.html?appid=71c33534f27249c5b3fe314f2f7df564>

² Other occupied watersheds within the native range of the species include Malibu Creek, Los Angeles River, San Gabriel River, Santa Margarita River, and San Luis Rey River.

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provide a greater balance between the need to increase local water supplies and to maintain the limited functioning riparian and estuarine habitats remaining in Southern California.

We offer the following specific comments and recommendations regarding project-associated biological impacts based on our review of the DEIR and our knowledge of declining habitat types and species within Orange County. We provide these comments pursuant to the Act, including our responsibility for ensuring compliance with the Southern Orange HCP, and in keeping with our agency's mission: "working with others to conserve, protect, and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people."

1. **Simulated Flow Conditions:** Models were developed to evaluate changes in recharge and flow rates from baseline conditions as a result of Phase 1 of the project based on flow data available between 1946 and 2014 (DEIR, page 3.8-22). Additional models were developed to predict breaching events at the lagoon mouth (DEIR, page 3.3-16) and opportunities for passage of southern California steelhead (*Oncorhynchus mykiss*) through the project area (DEIR, page 3.3-42). We are concerned that the models underestimate the differences in the hydrograph with and without the project.

First, the flow data over the period of record may not reflect current or future climatic conditions. The volume of flow within the project area is estimated to range from 474 acre-feet per year (afy) to 101,941 afy with an average of 20,290 afy. The use of the entire period of record does not acknowledge increases in groundwater pumping within the watershed and associated changes in the extent of surface flows. It is also not clear if the model accounts for implementation of the 2016 Adaptive Pumping Management Plan (AMP), which places a cap on the extent of groundwater pumping in the project vicinity.

Second, the analysis in the DEIR assumes flows through the project area are "flashy" (i.e., rapid increase and decrease in streamflow with rainstorms). Application of a flashy profile to the model decreases the number of days when conditions are considered suitable for passage of steelhead relative to a natural hydrograph because it reduces the number of breaching events. It also increases the amount of flow "lost" to the ocean and decreases the extent of natural recharge within the system. Discharges from Trabuco Creek may be flashy because the watershed area is largely developed; however, significant changes in hydrology within San Juan Creek are not expected due to implementation of WQMPs and the SAMP.

Finally, passage days for steelhead are based on applying flows over a fixed bed; whereas the actual channel has a soft bottom. We expect channel topography will change seasonally and annually in response to the number and magnitude of precipitation events. Therefore, it is important to understand when the topographic data was collected, relative to the expected timing of steelhead migration and how the channel topography changes over time.

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Thus, projected changes to the hydrograph resulting from the project, relative to the baseline condition are based on specific model assumptions that may not be appropriate for the system. Because the DEIR depends on the results of models to predict impacts to biological resources, we believe impacts to biological resources may be greatly underestimated.

2. **Phase 1 Impacts to Wildlife Movement:** The proposed project area provides an important movement corridor for aquatic species and mammals from coastal to inland portions of San Juan Creek. The DEIR concludes that impacts to wildlife movement will be less than significant with implementation of a Fish Rescue and Relocation Plan (BIO 1) and an increase in steelhead migration days compared to modeled existing conditions (BIO 5). We disagree with this conclusion for several reasons:
- a. The analysis does not consider that arroyo chub may get washed below the rubber dams and may be unable to return upstream. No mitigation is provided for the permanent loss of arroyo chub individuals from the breeding population. We are concerned that proposed fish rescue plan is not intended to address fish that are washed downstream from the dams.
 - b. The existing number of passage days for steelhead may be greater than the modeled conditions (as discussed above), so an increase over modeled conditions may not be an improvement for steelhead. It is not clear how the fish passage structures or other improvements will be monitored to demonstrate an improvement over modeled conditions. It also does not appear that maintenance will be conducted specifically to ensure fish passage opportunities will be provided over the life of the project.
 - c. The anticipated movement paths of medium and large mammals around the proposed rubber dams and inundation areas are not provided in the DEIR. We are concerned that the gradient of the cement channel sides or existing fencing may limit the potential for movement in and out of the channel. In addition, the County of Orange is in the process of converting the sloping channel walls to vertical sheet pile walls, which we would not expect medium/large mammals to be able to traverse.
3. **Phase 1 Impacts to San Juan Creek lagoon:** The DEIR anticipates the proposed project will affect the San Juan Creek lagoon by reducing flow velocity, increasing silt and sediment accumulation, and reducing the number of days per year that the lagoon is open to the ocean. While acknowledging these substantial project-related changes to the lagoon, the DEIR does not discuss the status of existing biological resources in the lagoon (e.g., shorebirds that forage in the lagoon), or how project-related reductions in habitat quality (including water quality) will affect those resources. No mitigation for impacts to the biological resources within the lagoon is provided. In addition, we are concerned that the project will increase the frequency and extent of beach nourishment

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activities near the lagoon due to a reduction in sediment transport to the beach. Beach nourishment activities are often association with reductions to benthic community and impacts to shorebirds.

4. **Phase 1 Increases in Invasive Species:** The DEIR does not anticipate a project-related increase in invasive plants or animals because vegetation will continue to be maintained by Orange County Public Works and because water is not expected to be impounded year-round. We are concerned that impounded water will increase the extent of invasive species in the watershed:

- a. Impounded water will encourage plant growth (both native and non-native) and will require more frequent removal efforts to ensure the flood capacity of the channel is maintained. It is not clear in the DEIR if Orange County Public Works anticipates more frequent maintenance or if they will be responsible for ensuring non-native plants do not spread upstream or downstream from the project site. No mitigation measures are identified to prevent the spread of non-native plants.
- b. The DEIR states that water impounded behind the rubber dams is anticipated to last for weeks or months and acknowledges that ponded water has the potential to support aquatic invasive species, such as bullfrogs (*Lithobates catesbeianus*). Because invasive species have the potential to be washed down into the ponds from upstream and may stay there for months, they could also breed in the ponds. If a rain event occurs before the pond evaporates completely, the invasive species could spread upstream. Native fish may also become stranded in the ponds when surface flows become disconnected at the end of a rain event. We are concerned that the fish rescue plan (BIO-1) is not intended to recover native fish from the ponds prior to predation by invasive species.

Substantial resources have been invested to remove of invasive plants and animals upstream of the proposed project site both in Trabuco and San Juan Creeks; therefore, we consider any project-related increase in invasive species to be a significant impact.

5. **Phase 1 Groundwater Extraction:** The proposed project will enable increases in groundwater extraction from existing production facilities. The DEIR concludes that the increase in groundwater pumping will not impact riparian vegetation because an ongoing monitoring program (AMP) that is implemented pursuant to existing Water Rights Permits 21074 and 21138 will maintain specific groundwater levels. Monitoring for the AMP appears to focus on the health of the riparian vegetation. There is no analysis of the potential effects to other biological resources (e.g., native fish) from groundwater extraction. Because a portion of the groundwater pumping will occur upstream of the inundation area for the rubber dams, we are concerned that the proposed project has the potential to result in a change in the distribution and extent of surface flows in San Juan Creek. A reduction in surface slows upstream from the

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inundation area for the rubber dams could reduce the extent of habitat available for steelhead and arroyo chub.

6. Program Level Analysis: The DEIR concludes that implementation of future phases of the project will result in less than significant impacts to biological resources based on implementation of proposed mitigation measures in the DEIR. We disagree with this conclusion because insufficient information is provided to determine the location or extent of impacts or to determine if opportunities are available to provide suitable mitigation for those impacts. Opportunities to replace functioning riparian and aquatic habitat are increasingly rare in Orange County. Finally, the DEIR concludes that the proposed project will not conflict with an adopted Habitat Conservation Plan. Future phases of the project may occur within the planning areas for the Southern Orange HCP and/or the Central/Coastal Orange Subregion Natural Community Conservation Plan/Habitat Conservation Plan (Central/Coastal Orange NCCP/HCP); however, mitigation measure BIO-6 only requires consistency with the Central/Coastal Orange NCCP/HCP. We are concerned that future phases of the project have the potential to impact biological resources within the Southern Orange HCP Habitat Reserve.

In summary, the San Juan Creek watershed is an ecologically significant watershed that is one of the few remaining undammed watersheds in southern California, and the DEIR does not adequately consider or address the potentially significant direct and indirect effects to the biological resources resulting from the proposed project. We recommend that additional alternatives to the proposed project are considered that minimize the extent of impacts to important aquatic resources in San Juan Creek watershed. We appreciate the opportunity to comment on the subject DEIR and would like an opportunity to meet with the project proponents and NMFS to discuss issues identified in our letter prior to the release of a Final EIR. If you have any questions regarding these comments, please contact Christine Medak of this office at (760) 431-9440 ext. 298.

Sincerely,

KAREN
GOEBEL

Digitally signed by
KAREN GOEBEL
Date: 2018.02.27
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Karen A. Goebel
Assistant Field Supervisor

cc:

Laura Eisenberg, Rancho Mission Viejo
Corice Farrar, U.S. Army Corps of Engineers
Kevin Hupf, California Department of Fish and Wildlife
Ahmad Kashkoli, State Water Resources Control Board
Brittany Struck, National Marine Fisheries Service

Mr. Tom Barnes (FWS-OR-17B0093-18CPA0141)

7

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[Corps] U.S. Army Corps of Engineers. 2005. Draft Environmental Impact Statement San Juan Creek and Western San Mateo Creek Watershed Special Area Management Plan (SAMP). Los Angeles District, Corps of Engineers.

Marine Taxonomic Services. 2017. 5-day notice of tidewater goby presence/absence of populations aboard Marine Corps Base, Camp Pendleton, California. Prepared for Recovery Permit Coordinator, Carlsbad Fish and Wildlife Office, Carlsbad, California.

[Service] U.S. Fish and Wildlife Service. 2005. Recovery Plan for the Tidewater Goby (*Eucyclogobius newberryi*). U.S. Fish and Wildlife Service, Portland, Oregon. vi + 199 pp.

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Swift C.C., B. Spies, R.A. Ellingson, and D.K. Jacobs. 2016. A New Species of the Bay Goby Genus *Eucyclogobius*, Endemic to Southern California: Evolution, Conservation, and Decline. PLoS ONE 11(7): e0158543. doi:10.1371/journal.pone.0158543



Department of Toxic Substances Control



Matthew Rodriguez
Secretary for
Environmental Protection

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Edmund G. Brown Jr.
Governor

January 17, 2018

Mr. Tom Barnes
Project Director
Environmental Science Associates (ESA)
626 Wilshire Boulevard, Suite 1100
Los Angeles, California 90017
tbarnes@esassoc.com

DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT (EIR) FOR SAN JUAN WATERSHED PROJECT (SCH# 2016061018)

Dear Mr. Barnes:

The Department of Toxic Substances Control (DTSC) has reviewed the subject EIR. The following project description is stated in the EIR: "The Santa Margarita Water District (SMWD), in conjunction with South Coast Water District (SCWD), is proposing to the San Juan Watershed Project (proposed project) that would develop facilities to manage surface water resources to enhance groundwater resources of the San Juan Groundwater Basin. The proposed project would increase the capture and storage of urban runoff and stormwater, optimize the use of recycled water for beneficial reuse, minimize the potential for undesirable impacts, and augment local groundwater supplies to reduce the region's dependence on imported water."

A4-1

Based on the review of the submitted document DTSC has the following comments:

1. The EIR states, "As shown above in Table 3.7-1, there are two open-case hazardous materials sites near the rubber dam facilities: the Capistrano Car Wash (32841 Camino Capistrano) and the Kinoshita Farm Site (32701 Alipaz Street). DTSC recommends investigation and remedial actions, if necessary, overseen by the appropriate regulatory agencies be conducted prior to the new development or any construction."

A4-2

The EIR further states, "Rubber Dam No. 1, Rubber Dam No. 2, and their associated facilities would be located south of the two hazardous materials sites, and therefore could be at risk of potential contaminants extending from the two sites. However, in *California Building Industry Association v. Bay Area Air Quality*

A4-3

Mr. Tom Barnes
January 17, 2018
Page 2

Management District (commonly referred to as the “Reverse CEQA” case), the California Supreme Court held that CEQA does not require an analysis of the environment’s impact on a project. Based on the text of the statute, the court held that CEQA review should be “limited to those impacts on a project’s users or residents that arise from the project’s effects on the environment” (Allen Matkins 2015). Therefore, these hazardous materials sites do not require further analysis under CEQA on their impact on the proposed project.” This quote is repeated several places in the EIR. DTSC recommends assessment of potential impact to HH&E from sources of contamination within the project area as well as offsite nearby sources.

2. If the project plans include discharging wastewater to a storm drain, you may be required to obtain an NPDES permit from the overseeing Regional Water Quality Control Board (RWQCB).
3. If planned activities include building modifications/demolitions, lead-based paints or products, mercury, and asbestos containing materials (ACMs) should be investigated and mitigated/disposed of in accordance with all applicable and relevant laws and regulations. In addition, evaluate whether polychlorinated biphenyls (PCBs) containing materials are present in onsite buildings and address as necessary to protect human health and the environment.
4. DTSC recommends evaluation, proper investigation and mitigation, if necessary, of onsite areas with current or historic PCB-containing transformers.
5. If the site was used for agricultural or related activities, residual pesticides may be present in onsite soil. DTSC recommends investigation and mitigation, as necessary, to address potential impact to human health and environment from residual pesticides.
6. If soil contamination is suspected or observed in the project area, then excavated soil should be sampled prior to export/disposal. If the soil is contaminated, it should be disposed of properly in accordance with all applicable and relevant laws and regulations. In addition, if the project proposes to import soil to backfill the excavated areas, proper evaluation and/or sampling should be conducted to make sure that the imported soil is free of contamination.
7. If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the EIR should identify how any required investigation and/or remediation will be conducted, and the appropriate government agency to provide regulatory oversight.

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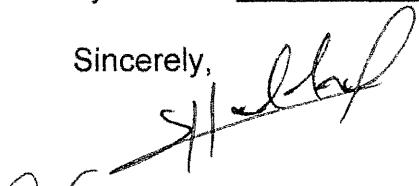
A4-8

Mr. Tom Barnes
January 17, 2018
Page 3

If you have any questions regarding this letter, please contact me at (714) 484-5380 or by email at Johnson.Abraham@dtsc.ca.gov.

A4-9

Sincerely,



Johnson P. Abraham
Project Manager
Brownfields Restoration and School Evaluation Branch
Site Mitigation and Restoration Program - Cypress

kl/sh/ja

cc: See next page.

Comment Letter A4

Mr. Tom Barnes

January 17, 2018

Page 4

cc: Mr. Don Bunts (via e-mail)
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donb@smwd.com

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Mr. Shahir Haddad, Chief (via e-mail)
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CEQA# 2016061018



DEPARTMENT OF PARKS AND RECREATION
Orange Coast District
3030 Avenida Del Presidente
San Clemente, CA 92672
949-492-0802

Lisa Ann L. Mangat, Director

Transmitted via email to: tbarnes@esassoc.com

February 23, 2018

Tom Barnes, ESA Associates
626 Wilshire Boulevard Suite 1100
Los Angeles, CA 90017

Comment Letter Regarding: Draft Environmental Impact Report for the San Juan Watershed Project, Santa Margarita Water District (Lead Agency)
State Clearinghouse No. 2016121001

Dear Mr. Barnes,

As neighboring land managers, State Parks is interested in and has potential concerns about the effects from the proposal to develop facilities to manage surface water resources to enhance groundwater resources of the San Juan Groundwater Basin. WE have reviewed the draft Environmental Impact Report (EIR) titled San Juan Watershed Project. We understand that the project proposed the installation of three rubber dams to maximize groundwater recharge and reduce surface flow water to the mouth of San Juan Creek and Doheny State Beach.

The mouth of San Juan Creek is managed by California State Parks and provides many resources for wildlife, including resident and migrating shorebirds. The federally threatened Western snowy plover (WESP) has been observed overwintering and roosting at Doheny State Beach and has been observed foraging alongside many other shorebirds within the lagoon that forms at the mouth of the creek. The loss of surface water flow would reduce and possibly eliminate water at the creek mouth for much of the year and would ultimately change the conditions that perpetuate insects and other invertebrates, an important food source for this sensitive species as well as the other bird species that rely on this creek mouth for forage. WESPs overall have been experiencing a decline in roost numbers throughout Orange and Los Angeles counties. The creek mouth coupled with the presence of beach wrack makes Doheny State Beach one of the few areas in south Orange County that hosts overwintering WESP, and changing these conditions may jeopardize habitat suitability for the WESP. We feel that the indirect impact to WESP and other shorebirds has not been addressed within the Draft EIR.

Doheny State Beach has experienced an increased loss of sediment downcoast of San Juan Creek over the past decade. The large swells and El Niño events of 2016 further exasperated the high levels of erosion and threatened the south day use parking lot as well as a restroom facility, an area that receives a high amount of visitor use. By preventing the low and moderate level flooding events from carrying upstream sediment

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A5-2

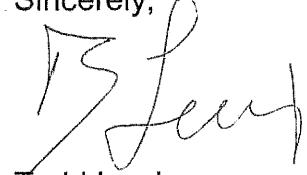
A5-3

Comment Letter A5

to the creek mouth and ultimately to the beach downcoast, erosion may be exasperated and lead to further issues. Sediment that would nourish and accumulate on the beach naturally will now be trapped in sediment basins and removed from the system. The high flow flood events that would trigger the deflation of the dams would likely push sediment further offshore and miss the area immediately downcoast, leading to further erosion. The potential for downstream scouring from increased water velocity and even further reducing the sediment available for natural beach nourishment downcoast is of concern as well. We feel that the erosional effects as a result of this project to Doheny State Beach from the reduction of sediment deposition have not been adequately addressed.

Thank you for the opportunity to express our concerns. If you should have any questions or need additional information, please do not hesitate to call our District Environmental Scientist Lana Nguyen at 949-201-0884 or contact via email to Lana.Nguyen@parks.ca.gov.

Sincerely,



Todd Lewis
District Superintendent
Orange Coast District

Copy via email: Lana Nguyen, Orange Coast District, CA State Parks
 Rich Haydon, Orange Coast District, CA State Parks
 James Newland, Orange Coast District, CA State Parks

A5-3

A5-4



Comment Letter A6



EDMUND G. BROWN JR.
GOVERNOR



MATTHEW RODRIGUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

FEB 23 2018

In Reply Refer to:
MSM:266.0

Santa Margarita Water District
c/o Environmental Science Associates
Attn: Tom Barnes
tbarnes@esassoc.com

Dear Mr. Barnes:

COMMENTS TO THE DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE SAN JUAN WATERSHED PROJECT (SCH 2016121001) OF SANTA MARGARITA WATER DISTRICT IN ORANGE COUNTY

The State Water Resources Control Board (State Water Board), Division of Water Rights (Division) appreciates the opportunity to comment, as a potential responsible agency, on the draft Environmental Impact Report (DEIR) circulated for the San Juan Watershed Project (Project) proposed by the Santa Margarita Water District (District).

The Project proposes the development of facilities to manage surface water resources for the purpose of enhancing groundwater resources within the San Juan Groundwater Basin. The Project would increase the capture and storage of surface water, optimize the use of recycled water for beneficial reuse, and augment local groundwater supplies to reduce the region's dependence on imported water. The Project is to be constructed in phases. The first phase includes the installation of up to three rubber dams in the San Juan Creek watershed that would act as instream detention facilities for the purpose of allowing ponded water to naturally infiltrate into the stream bed, thereby recharging the groundwater basin. The Project's subsequent phases would include the construction of additional rubber dams, conveyance pipelines and extraction wells.

A6-1

Division staff met with District staff to discuss the Project on March 29, 2017. As discussed during that meeting, it appears that the Project is proposing to divert water in such a manner that may require discretionary approval of the State Water Board in the form of one or more water right applications and/or petitions.

A6-2

The DEIR recognizes the need for a valid basis of right to divert and use surface water in the San Juan Creek watershed, however the DEIR lacks specific information regarding whether current water rights are adequate to meet the needs of the Project. Without this information, the Division cannot determine what types of discretionary approvals may be needed. In addition to CEQA, the State Water Board must comply with related statutory, regulatory, policy, and other requirements for discretionary approvals. Therefore, it is important to identify any water right discretionary approvals early in the process in order to ensure that the Project can be completed in a timely manner.

A6-3

FELICIA MARCUS, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | www.waterboards.ca.gov

Comment Letter A6

Tom Barnes

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If a water right discretionary approval is needed, the State Water Board will act as a Responsible Agency for the Project. Accordingly, the State Water Board may need to rely on the District's California Environmental Quality Act (CEQA) document. The District should therefore ensure that any environmental document prepared for the Project considers all potential direct and indirect environmental impacts associated with the diversion and use of water. The State Water Board must consider the environmental documentation, and any other relevant evidence in the record, and reach its own conclusions on whether and how to approve the Project. (Cal. Code Regs., tit. 14, § 15096, subd. (a).) A thorough environmental analysis with appropriate mitigation and monitoring is an important part of the process; however additional hydrologic analyses and other considerations may be required before the State Water Board can make a decision regarding any potential water right discretionary approvals.

A6-3

The DEIR incorrectly describes the potential need for a valid basis of right to divert and use water within the section "Applications for Groundwater Recharge/Storage". Within the same section, two existing post-1914 appropriative water right permits are described later in a separate subsection entitled "Regional". The State Water Board, not the Regional Water Quality Control Boards (Regional Water Boards), administers water rights law in California, therefore all discussion of water rights requirements should be contained within the "State" subsection. The two existing post-1914 appropriative water right permits described in the DEIR allow the direct diversion of water from certain locations and the use of diverted water for certain purposes within a designated area. To the extent that the Project proposes the diversion and use of water in a manner that is not consistent with the two permits, petitions to make changes to the existing water right permits or applications for new permits may be required.

A6-4

A6-5

The DEIR incorrectly describes the agencies responsible for ensuring compliance with Section 401 of the Federal Clean Water Act. The State Water Board, not the Regional Water Boards, is responsible for water quality certifications for activities involved or associated with a water diversion project where water is appropriated or is put to beneficial use and which requires a permit issued by the U.S. Army Corps of Engineers. The Project proposes construction of facilities associated with a water diversion project within the stream channel of San Juan Creek and/or Arroyo Trabuco. Such construction may require a Federal permit in accordance with the Federal Clean Water Act. Any applicant seeking a Federal permit where the proposed activity may result in a discharge to surface water is required to obtain a water quality certification from the State of California, and the State Water Board would issue such a certification.

A6-6

If you have any questions, please contact Mitchell Moody at (916) 341-5383 or mitchell.moody@waterboards.ca.gov. Written correspondence or inquiries should be addressed as follows: State Water Resources Control Board, Division of Water Rights, Attn: Mitchell Moody, P.O. Box 2000, Sacramento, CA, 95812-2000.

A6-7

Sincerely,

ORIGINAL SIGNED BY:

Matt McCarthy, Senior
Coastal Lahontan Permitting Unit
Division of Water Rights

ec: See next page.

Tom Barnes

- 3 -

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Comment Letter A7
EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



March 5, 2018

Mr. Tom Barnes
Environmental Science Associates
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Tbarnes@esassoc.com

Subject: Comments on the Draft Program Environmental Impact Report for the San Juan Watershed Project, Orange County, CA (SCH# 2016121001)

Dear Mr. Barnes:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced San Juan Watershed Project Draft Program Environmental Impact Report (PEIR), dated December 2017. The Department provided comments on the Notice of Preparation (NOP) for the project in a letter dated February 1, 2017. The Department appreciates the Santa Margarita Water District (SMWD) granting a time extension until March 7, 2018, to provide comments on this document¹. The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act, [CEQA] Guidelines §15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (Fish and Game Code § 2050 et seq.) and Fish and Game Code (FGC) section 1600 et seq. The Department also administers the Natural Community Conservation Planning program.

A7-1

The San Juan Watershed Project (project) would implement an integrated water resources management plan intended to maximize beneficial uses of the San Juan Groundwater Basin. The project would increase the capture and storage of urban runoff and stormwater, optimize the use of recycled water for beneficial reuse, minimize the potential for undesirable impacts, and augment local water supplies to reduce the region's dependence on imported water. The project would be constructed in multiple phases. Phase I would construct and operate three inflatable rubber dams within San Juan Creek, located in the City of San Juan Capistrano and the County of Orange, to provide groundwater recharge of stormwater that would otherwise flow to the ocean. During storm events the rubber dams would remain inflated, provided the flow in the channel remains less than 1-foot greater than the rubber dam crest. The dams would deflate when this is exceeded and re-inflate when the flow in the channel is reduced. Subsequent phases, which are not analyzed in the draft PEIR, would construct additional rubber dams in undisclosed locations within San Juan Creek.

A7-2

Our primary concerns regarding the draft PEIR include the adequacy of analysis of project impacts under CEQA and potential species impacts. Specifically, we are concerned about the movement of southern California steelhead (steelhead; *Oncorhynchus mykiss*, a species listed as endangered under the federal Endangered Species Act [ESA]), tidewater goby

A7-3

¹ Extension granted by Mr. Don Bunts, Chief Engineer, Santa Margarita Water District, on February 4, 2018.

Mr. Tom Barnes
Environmental Science Associates
March 5, 2018
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(*Eucyclogobius newberryi*, listed endangered under ESA), and Pacific lamprey (*Lampetra tridentata*; a California and federal species of special concern), and other aquatic species. We offer the following comments and recommendations to assist the SMWD in avoiding or minimizing potential project impacts on biological resources.

1. The SMWD published the Department's letter, "Comments on the Notice of Preparation of a Draft Environmental Impact Report for the San Juan Watershed Project, Orange County, CA (SCH#2016121001)," in Appendix A of the draft PEIR; however, SMWD did not address our comments, neither in the body of the draft PEIR nor as annotations in Appendix A. The Department remains concerned that the draft PEIR did not take into account the recommendations and observations provided in our NOP comments for this project. We are especially concerned that, as stated in the above-referenced letter, project activities are not in compliance with the FGC. Section 5901 of the FGC states that, "except as otherwise provided in this code, it is unlawful to construct or maintain in any stream in Districts [4], any device or contrivances that prevents, impedes, or tends to prevent or impede, the passing of fish up and down stream.". Given that the project area is in District 4 (FGC § 11010; see attached map), the final PEIR should provide a thorough analysis of project activities with regard to this section, as well as a discussion as to whether project activities are misaligned with this or any other section of the FGC, with special consideration given to Chapter 3, Articles 1-5.
2. The Department requests further clarification as to how the draft PEIR concluded that cumulative impacts of the project on biological resources would be less than significant with mitigation. The draft PEIR analyzes Phase 1 of construction, which includes the installation of three rubber dams in San Juan Creek. Subsequent phases would construct up to a total of 12 dams in undisclosed locations within San Juan Creek (PEIR 2-20). Analysis of construction activities outside of Phase 1 is not provided, beyond the statement in the Cumulative Impacts section that, "during the subsequent phases, implementation of these same measures as well as BIO-3 and BIO-6 would reduce potential impacts to special-status species, sensitive vegetation communities, state- and federally-regulated waters, wildlife movement, and local plans, policies, and ordinances to less than significant" (PEIR 4-13). Without locations for subsequent infrastructure, it is unclear how it was concluded that the whole of the project's cumulative impacts will be less than significant with mitigation.

The Department has further concerns that FGC section 5937 was not considered while analyzing cumulative impacts. This section states that, "the owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam." Without the disclosure of the locations of the dams to be installed in other phases of this project, it is not clear how project activities will or will not comply with FGC section 5937, and therefore the Department recommends that the final PEIR be amended to include a thorough and specific discussion of this section of the FGC.

Additionally, the Cumulative Impacts section briefly states that, "...drop structures within the channels that are currently acting as fish passage barriers may be removed or modified to allow for increased passage. The proposed project would maintain sufficient fish passage opportunities in the event that the upstream impediments are removed" (PEIR 4-13). Planning efforts in the past 5 to 10 years have led to several barrier removals in the mid and

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upper watershed in San Juan, Trabuco, and Holy Jim Creeks. The United States Forest Service has removed 18 of 79 instream check dams since 2014 and plans to remove 25 in 2018 and the remainder in 2019. It is not directly explained how the mitigation measures for the subsequent phases, which are not described in the draft PEIR, would ensure that impacts to the entire watershed would be less than significant given these ongoing projects.

A cumulative impacts discussion, "...should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact" (CEQA Guidelines §15130[b]). The PEIR lacks information regarding activities and mitigation beyond Phase 1, discussion regarding FGC section 5937, and analysis of the many projects that are intended to improve fish passage in San Juan Creek. The final PEIR should include expanded analysis and discussion of the additional phases of the project, mitigation associated with those phases, and how all phases will or will not impact future projects to improve steelhead passage in San Juan Creek. How the project's cumulative impacts intersect with FGC should also be discussed at length.

3. The draft PEIR discusses five alternatives to the proposed project, two rejected alternatives and three considered alternatives, which analyze impacts of various degrees of infrastructure in San Juan Creek. The Department disagrees with the rejection of the Off-Stream Storage and Recharge Alternative as described in the draft PEIR (pages 5-3 and 5-4). The discussion presented does not appear to have explored injection wells as a means to increase the volume of water in the aquifer, but rather used passive filtration as the principal method. The Department would like to emphasize that the impacts to aquatic biological resources associated with off-channel storage are far fewer than the ongoing impacts of the Preferred Alternative, and that the Off-Stream Storage and Recharge Alternative does not conflict with FGC Chapter 3, Articles 1-5 (see Comment 1).

Furthermore, the analysis of this rejected alternative was "...evaluated during the SJBA Foundational Actions Fund (FAF) study" (PEIR 5-4). No further reference, citation, or discussion of this document is made, nor is the document available in the draft PEIR. The study should be incorporated by reference and made available, per CEQA Guidelines section 15150. Without access to this study, the Department cannot determine whether analysis of this alternative was appropriate to the procedural and substantive requirements of CEQA. Alternatives are to include an "alternative [that] would impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Guidelines §15126.6[b]), and, "the range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making" (CEQA Guidelines §15126.6[f]). The Department strongly recommends that an alternative design such as the Off-Stream Storage and Recharge Alternative, which clearly demonstrates avoidance and minimization of impacts to associated species to the maximum extent practicable (CEQA Guidelines §15021[a][2]), be reconsidered. We also request that the SJBA FAF study be made available as part of Appendix C: Biological Technical Report of the final PEIR.

4. The Department has further concerns regarding mitigation measure BIO-5, which states,

"The Santa Margarita Water District (SMWD) shall coordinate with NMFS [the National Marine Fisheries Service] and OCPW [Orange County Public Works] to participate in

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steelhead habitat restoration priorities within the San Juan Creek watershed. Participation may include implementation of in-channel fish passage improvements within San Juan Creek and mutually agreed upon funding and/or planning assistance commensurate with SMWD's level of effect to assist the resource agencies with the Steelhead Core 1 Recovery Population goals. These migratory passage improvements implemented with assistance from SMWD would result in increased migration days within San Juan Creek and Arroyo Trabuco compared to modeled existing conditions" (PEIR ES-7).

Mitigation measures "...must be fully enforceable through permit conditions, agreements, or other legally binding instruments" (CEQA Guidelines §15126.4[2]). Without a firm, specific, written commitment to participation, planning, and/or the execution of a financial instrument to develop and remediate existing fish passage barriers within the watershed, the Department concludes that this mitigation measure does not bring impacts of project activities on aquatic species below a significant level. In order to for BIO-5 to be effective, we recommend that the mitigation measure be rewritten to include specific, enforceable actions and commitments to steelhead habitat restoration, described in as much detail as possible. We also request that the Department be included in the measure, along with NMFS and OCPW, regarding consultation on restoration efforts.

Species Impacts

5. The Department remains concerned regarding the following factors pertaining to the impacts of the project on steelhead passage, the analysis provided, and the mitigation proposed to reduce those impacts:
 - a. the draft PEIR states that, "the minimum passable flow depth for adult steelhead in flow-through cross sections where leaping was not required was established at 0.5 foot, consistent with the Trabuco Creek steelhead barrier assessment (HDR, Inc., 2015)" (Biological Technical Report, Appendix D, page 7). The Department is unclear as to why this minimum passable flow was used, given 0.8 foot or 9.6 inches is standard for adult passage, per Department Instream Flow requirements (Taylor and Ross, 2010). The use of an incorrect standard may erroneously skew the potential impact of the project on steelhead passage;
 - b. there is no discussion in the draft PEIR of potential jump heights that steelhead and other aquatic species would have to navigate in order to pass over the rock riprap, the stilling basin, or the inflated and deflated dam at each location. The Department and NMFS require 0.5 foot for juvenile salmonids and 1.0 foot clearance for adult salmonids;
 - c. the impact of stress and delayed migration, which is caused when salmonids are required to navigate over multiple dams and/or through multiple fish ladders in a system known to be "flashy" is not discussed in the Biological Technical Report; and
 - d. the proposed design for the fish ladder at each site does not include enough detail to determine if it will be adequate to provide for passage of adults and juvenile steelhead. The Department requests that the final Biological Technical Report be amended to include the following information regarding fish ladder design:

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- i. examples of where this design is currently installed and functioning to pass salmonids;
- ii. the flow conditions under which this design will function appropriately; and
- iii. information on how debris will be prevented from entering the ladder or how debris that becomes trapped in the fish ladder will be removed during the migration events. We are especially concerned about this because generally, once the flows are passable for fish, it is unsafe for people to dislodge debris.

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The Department recommends that these factors be thoroughly analyzed and discussed in the final PEIR and Biological Technical report, in order to ensure that impacts of the project on steelhead passage are less than significant with the proposed mitigation.

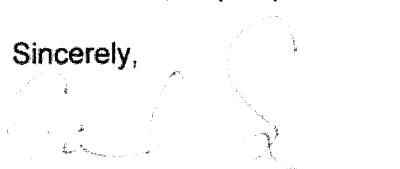
6. The draft PEIR does not analyze impacts to Pacific lamprey independently from other aquatic species. There is neither mention of the potential impacts to adult and juvenile Pacific lamprey relative to its habitat, water quality, or passage needs, nor were passage requirements for this species discussed. The passage needs of Pacific lamprey are significantly different from steelhead and other aquatic wildlife resources and should be discussed independently. The Department is concerned that without additional analysis and mitigation, project activities could impede or prevent the recovery of this species. We therefore recommend that the final PEIR be amended to include an analysis and discussion of the impacts of the project on Pacific lamprey independently of steelhead and other aquatic species, and that additional mitigation measures be incorporated if appropriate.

A7-17

We appreciate the opportunity to comment on the draft PEIR for this project and to assist the SMWD in further minimizing and mitigating project impacts to biological resources. We request that a written response our comments be provided in the final PEIR, as required per CEQA Guidelines section 15088(d). If you have any questions or comments regarding this letter, please contact Jennifer Turner, Environmental Scientist, at (858) 467-2717 or jennifer.turner@wildlife.ca.gov, or Mary Larson, Steelhead Restoration and Recovery Unit Coordinator, at (562) 342-7186 or mary.larson@wildlife.ca.gov.

A7-18

Sincerely,


Gail K. Sevrens
Environmental Program Manager
South Coast Region

Enclosure: Fish and Game (Wildlife) District Map

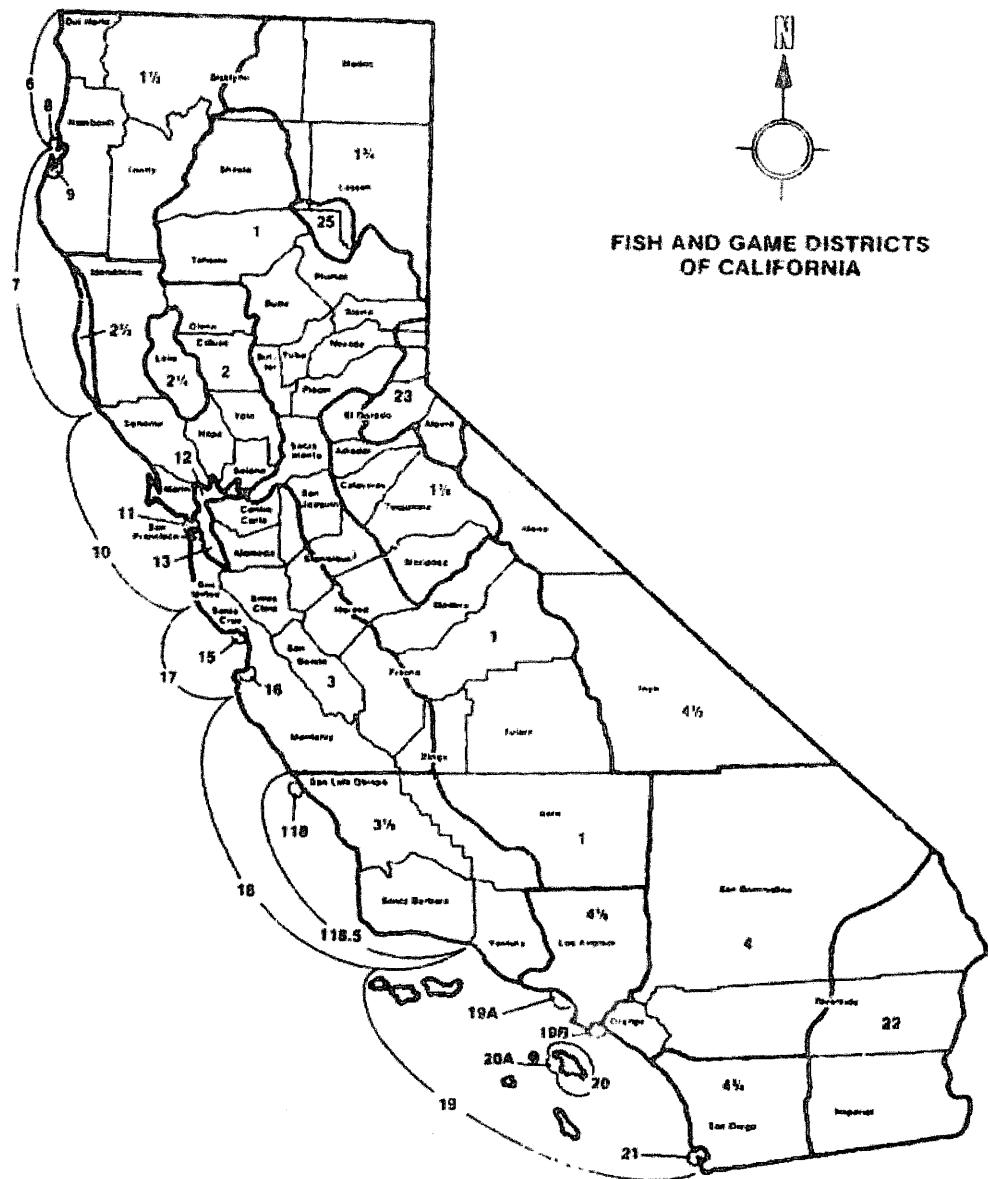
cc: Rich Burg, Department of Fish and Wildlife
Ahmad Kashkoli, State Water Resources Control Board
Brittany Struck, National Marine Fisheries Service
Christine Medak, U.S. Fish and Wildlife Service
Daniel Swenson, U.S. Army Corps of Engineers, Los Angeles District
Scott Morgan, State Clearinghouse

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Literature Cited

Taylor, Ross N. and M. Love. 2010. California Salmonid Stream Habitat Restoration Manual, V. 2, 4th ed., p. IX-42. Prepared by the California Department of Fish and Game.
(<http://www.dfg.ca.gov/fish/Resources/HabitatManual.asp>)

Fish and Game Maps



PublicWorks

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Shane L. Silsby, Director



February 20, 2018

NCL-16-047a

Tom Barnes
 Environmental Science Associates
 626 Wilshire Boulevard, Suite 1100
 Los Angeles, CA 90017

Subject: Draft Program Environmental Impact Report for the San Juan Watershed Project

Dear Mr. Barnes:

Thank you for the opportunity to comment on the Draft Program Environmental Impact Report for the San Juan Watershed Project by the Santa Margarita Water District (SMWD). The County of Orange offers for following comments for your consideration.

A8-1

OC Public Works – South Orange County Watershed Management Area

1. Section 2.1-2.5 (Pages 2-1 through 2-21); Section 3.8 (Page 3.8-1) and Section 4.2.8 (Pages 4-17 through 4-18): the proposed project described in the Draft Program EIR aligns with Integrated Regional Water Management (IRWM) goals for the South Orange County Watershed Management Area (OC WMA). Specifically, the project achieves multiple objectives and strategies in the South OC WMA IRWM Plan, for example: helping to control anthropogenic dry weather flows from the developed area of the WMA through infiltration; increase the supply and use of non-potable water; and improve reliability of all water supplies with consideration for climate change stresses. Given limitations on infiltration in the San Juan Hydrologic Unit, the proposed project would encourage infiltration of dry and wet weather flows in the riverbed, where infiltration is maximized. This promotes groundwater augmentation, improved surface water quality by encouraging infiltration of urban runoff and some wet weather flows, and reduces reliance on imported water supply. In addition to aligning with the South OC WMA IRWM Plan, the stated project benefits and multi-jurisdictional approach are reflective of the Statewide Priorities from the 2014 California Water Action Plan and Resource Management Strategies identified by the State Department of Water Resources in the 2013 California Water Plan Update.

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2. Section 2.1-2.5 (Pages 2-1 through 2-21): The proposed project implements alternatives identified within the 2014 San Juan Basin Groundwater Management and Facility Plan (SJBGMFP) to increase yield of the basin and promote local water supply; the SJBGMFP is an appendix to the 2013 IRWM Plan for the South OC WMA.

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3. Section 2.5.1 and 2.6.1, Phase I and Subsequent Phases (Page 2-9): “All rubber dams would be located within an Orange County Flood Control District (OCFCD) right-of-way.” All

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necessary permits from the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board, San Diego Region (RWQCB), and California Department of Fish and Wildlife (CDFW), and OCFCD (OCPW/County Property Permits) are to be obtained prior to the construction of the proposed project.

4. Section 2.5.2, Subsequent Phases (Page 2-20): "Up to nine additional rubber dams would be constructed within San Juan Creek and/or Arroyo Trabuco during subsequent phases of the proposed project." In April 2017, the South OC WMA submitted the Water Quality Improvement Plan (WQIP) for the San Juan Hydrologic Unit in accordance with Provision B of the San Diego Regional MS4 Permit. Approval is expected in early 2018. The WQIP identifies and describes strategies to address the highest priority water quality conditions (Pathogen Health Risk (indicator bacteria), Channel Erosion and Associated Geomorphic Impacts, and Unnatural Water Balance/Flow Regime). As part of the Channel Erosion and Associated Geomorphic Impacts analysis, a number of segments with San Juan Creek and Arroyo Trabuco were identified as potential rehabilitation areas to address channel erosion and geomorphic impacts. During planning stages of the subsequent design and construction of the rubber dam, South OC WMA would like to collaborate with SMWD and SJBA in developing a design plan that promotes groundwater augmentation and restores stream segments, which satisfies objectives of the SJBGMFP and WQIP.
5. Section 2.5.2, Subsequent Phase (Page 2-20): "Recycled water would be derived from one or more of the local municipal wastewater treatment plants and conveyed through pipelines to the creeks. Recycled water is currently produced from five wastewater and urban runoff treatment facilities capable of producing tertiary effluent compliant with Title 22 regulations for water reuse." Although capable of complying with Title 22 regulations for water reuse, the County is concerned discharge of tertiary treated recycled water to San Juan Creek will not meet water quality objectives outlined within the San Diego Basin Water Quality Control Plan (Basin Plan). The discharge of recycled water must be monitored and comply with water quality objectives outlined within the Basin Plan and applicable TMDLs. Other local groundwater replenishment projects within the area (Orange County Water District Groundwater Replenishment System: <https://www.ocwd.com/gwrs/>) utilize advanced treatment system and should be modeled to prevent the degradation of surface water quality.
6. Section 3.1.3 Aesthetics (Page 3.1-11): "AES-1 - SMWD shall prepare a Dam Maintenance Plan that includes measures to regularly inspect and clean the rubber dam structures and impoundment areas (i.e., ponded areas upstream of each dam). The Plan shall include methods for cleaning trash and debris, removing graffiti, and cleaning out sediment and residues. SMWD shall coordinate in-channel maintenance actions with the Orange County Flood Control District and the cities of San Juan Capistrano and Dana Point. SMWD shall be responsible for implementing the maintenance plan." The "Dam Maintenance Plan" (Operations and Maintenance Manual) along with a maintenance frequency and schedule will need to be submitted to OCPW for review in order to obtain the necessary encroachment permits for maintenance activities. Maintenance of the area will need to be clearly defined and will be the responsibility of SMWD. Please refer to OC Public Works – OC Infrastructure Programs – Flood Programs General Comment Number 2 below for additional guidance.
7. Section 3.3, Biological Resources (page 3.3-16): "In addition, San Juan Creek and Arroyo Trabuco have undergone substantial geomorphic changes. A 2002 watershed plan for San Juan

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Creek noted riverine and riparian habitat impacts from channel downcutting and other erosion problems along with poor water quality (USACE 2002 cited in CEMAR 2008). The same plan noted “phenomenal degrees of erosion damage” over the past 20 years in the lower reaches of Arroyo Trabuco (*ibid*).” The WQIP identifies Channel Erosion and Associated Geomorphic Impacts as a high priority water quality condition. Subsequent phases of rubber dam design and implementation may be located within potential rehabilitation areas to address channel erosion and geomorphic impacts. Although, Phase I of the proposed project is not located within potential rehabilitation areas, the Program EIR should address the potential impacts to these areas due to subsequent phases of the proposed project.

8. Section 3.3.3, Biological Impact Analysis (Page 3.3-32): “In addition, the San Diego RWQCB Municipal Separate Storm Sewer System (MS4) Permit requires all construction projects to implement effective BMPs for erosion control, sediment control, runoff and runoff control, and active/passive sediment treatment systems. Compliance with the Construction General Permit and the MS4 Permit would reduce potential impacts to water quality to less-than-significant levels.” In addition, the proposed project would require the development of a Water Quality Management Plan (WQMP) in accordance with the South Orange County Model WQMP/Technical Guidance Document (TGD), which was developed to comply with land development requirements the MS4 Permit.
9. Section 3.3.3, Biological Impact Analysis (Page 3.3-37): “In addition, while the slowing and ponding of water upstream of each rubber dam creates conditions suitable for riparian and aquatic vegetation establishment, ongoing vegetation management by OCPW following construction of the proposed project would prevent this from occurring within the BSA.” Please clarify which areas are proposed to be maintained by SMWD and which areas by OCPW.
10. Section 3.3.3, Biological Impact Analysis (Page 3.3-37): “Indirect impacts would result from decreased flow velocity upstream of each dam, as well as silt and sediment accumulation which would be released when the dams deflate during severe storm events. The result would be fewer but larger sediment discharge events.” This can potentially deteriorate water quality and contribute to downstream impairments as accumulated sediment will be transported downstream during wet weather conditions. Sediment transport can be mitigated through regular maintenance of the area upstream of the rubber dam and the stilling basins. Please clarify the maintenance frequency SWMD will follow to prevent the transport of accumulated silt and sediment.
11. Section 3.3.3, Biological Impact Analysis (Page 3.3-37): “The rubber dams would be regularly maintained to remove accumulated sediment and debris.” As noted above, Section 2.7.2 states, “Maintenance activities in and around the rubber dam structures would include periodic, as-needed removal of accumulated sediment and debris, inspection and replacement of the riprap scour protection, and inspection and maintenance of all concrete structures.” Please clarify at what frequency the accumulation of sediments will be removed and the agency responsible for conducting the maintenance. Additionally, clarification about the potential to transport accumulated sediment and increase pollutant loads during wet weather conditions should be address.

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Comment Letter A8

12. Section 3.3.3, Biological Impact Analysis (Page 3.3-42 - 43): “However, as discussed in Section 2.7.2, removal of accumulated sediment and debris at the dams would be performed on an as-needed basis.” As noted above, frequency of maintenance accumulated sediment and debris removal should be defined.
13. Section 3.5-2, Geology Impact Analysis (Page 3.5-14): “Should the subsequent phases result in disturbance of less than 1 acre during construction activities, then compliance with minimum BMPs would be required as specified by the Orange County Municipal Separate Storm Sewer System (MS4) Permit (SWQCB 2017) (as described in Section 3.8, Hydrology and Water Quality). Compliance with the required SWPPP and identified BMPs would ensure soil erosion and loss of topsoil impacts would be reduced to less than significant.” In addition, the proposed project would require the development of a WQMP in accordance with, via the South Orange County Model WQMP/Technical Guidance Document (TGD), which was developed to comply with land development requirements of the MS4 Permit.
14. Section 3.8.2, Hydrology and Water Quality Environmental Settings (page 3.8-2): “Surface water quality data collected from 2006 to 2010 from locations across the entire San Juan Basin were tabulated and evaluated in the San Juan Basin Groundwater and Facilities Management Plan (WEI 2013). Water samples were analyzed for total dissolved solids (TDS), nitrate, sulfate, chloride, manganese, and iron. The results were compared to primary or secondary maximum contaminant levels (MCLs), also referred to as primary and secondary drinking water standards, which the Basin Plan also uses as water quality objectives for inland surface waters. The results for TDS, sulfate, chloride, manganese, and iron generally exceeded their respective water quality objectives with higher concentrations in the lower basin of San Juan Creek. Nitrate was not exceeded in any of the surface water samples.” Please clarify whether the results were for surface water or groundwater and whether they were compared to Water Quality Objectives (WQOs) for surface water within the Basin Plans or drinking water MCLs. Similar text appears on page 3.8-4 in respect to groundwater quality.
15. Section 3.8.1, Hydrology and Water Quality Environmental Settings (page 3.8-7): “Seawater intrusion is monitored by obtaining groundwater level and water quality data at Monitoring Wells South Coast Water District (SCWD) MW-4S and MWDOC MW-2M, which serve as sentinel monitoring locations for seawater intrusion (see Figure 3.8-3 for well locations at the mouth of San Juan Creek).” Figure 3.8 - 3 does not present the well locations at the mouth of San Juan Creek.
16. Section 3.8.2, Hydrology and Water Quality Regulatory Framework (page 3.8-14): Specific mention of the Orange County Stormwater Program’s Drainage Area Management Plan (DAMP) (<http://ocwatersheds.com/documents/wqmp>) should be made under Program EIR heading Orange County General Plan. This document is the County’s principle guiding document for nonpoint source pollution mitigation. The Program EIR should recognize the DAMP’s agreements, structure, and programs, and, at the project level, make note to consider the specific water pollution control elements of the DAMP. The Program EIR should note that Priority Projects, in accordance with DAMP designation (Section 7), would require the development of a WQMP.
17. Section 3.8.2, Hydrology and Water Quality Regulatory Framework (page 3.8-15): “The MS4 Permit details discharge prohibitions, receiving water limitations, and monitoring and

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A8-17

A8-18

assessment program requirements in an effort to prevent the pollution of receiving waters from construction and operational sites.” It should be noted the MS4 permit regulates the discharge of pollutants into receiving water from the MS4.

18. Section 3.8.2, Hydrology and Water Quality Regulatory Framework (page 3.8-15): “A WQIP is being drafted for South Orange County focusing on the San Juan Hydrologic Unit that will identify the highest priority water quality conditions and implement strategies to improve discharge quality from MS4s; the expected completion date of the WQIP is Fall of 2017 (OCPW 2016a).” The WQIP was completed in April 2017, and is currently under review, with approval by the RWQCB anticipated in early 2018. A8-18

19. Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-20): “SWPPP during construction that includes but is not limited to erosion control, sediment control, waste management, and good housekeeping BMPs designed to reduce water quality impacts during construction.” In addition, surface water diversion and water quality monitoring will need to be addressed within the construction SWPPP as discharge are directly within a receiving water body. A8-19

20. Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-20): “In addition to dropping sediment out of the surface flow on the upstream side of the rubber dams, the stilling basins constructed on the downstream side of the rubber dams would further reduce the energy of the flow and drop sediment out of the surface water.” Please clarify whether this will be during dry weather conditions or wet weather conditions and how often the accumulated sediment will be removed from the upstream section of the rubber dams and the stilling basins. If the accumulated sediment is not removed, the potential for sediment transport downstream during wet weather conditions can be significant. Please address how this can be mitigated. A8-20

21. Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-21): “Access to the facility would be controlled to ensure that the public would not come into contact with the detained water. Impacts to water quality and Basin Plan water quality objectives would be less than significant.” The proposed project is located within San Juan Creek, a water body designated with REC-1 beneficial use. The water detained by the rubber dam has the potential to attract recreation by the local residents. Please address how this will be mitigated. A8-21

22. Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-21): “Discharge of recycled water to flood control channels for groundwater recharge would require compliance with Title 22 as regulated by DDW and CDPH. SMWD would obtain a NPDES discharge permit from the San Diego RWQCB for the discharge of recycled water to the creek.” A discharge permit from OCPW will also need to be obtained. Additional information such as effluent monitoring results and discharge volume will need to be submitted to OCPW. A8-22

23. Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-21): “As described for Phase I rubber dams, incorporation of the rubber dams into the channel would slow velocity of surface flows and therefore reduce occurrences of erosion and siltation within the channels.” Locations of rubber dams in subsequent phases are natural areas within Arroyo Trabuco and San Juan Creek. Sudden releases of water due the lowering of the rubber dam can potentially cause erosion within these areas. Additionally, the County’s proposed WQIP identifies Channel Erosion and Associated Geomorphic Impacts as a highest priority water quality conditions and has identified areas within Arroyo Trabuco and San Juan Creek as proposed A8-23

24. Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-21): “As described for Phase I rubber dams, incorporation of the rubber dams into the channel would slow velocity of surface flows and therefore reduce occurrences of erosion and siltation within the channels.” Locations of rubber dams in subsequent phases are natural areas within Arroyo Trabuco and San Juan Creek. Sudden releases of water due the lowering of the rubber dam can potentially cause erosion within these areas. Additionally, the County’s proposed WQIP identifies Channel Erosion and Associated Geomorphic Impacts as a highest priority water quality conditions and has identified areas within Arroyo Trabuco and San Juan Creek as proposed A8-24

25. Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-21): “As described for Phase I rubber dams, incorporation of the rubber dams into the channel would slow velocity of surface flows and therefore reduce occurrences of erosion and siltation within the channels.” Locations of rubber dams in subsequent phases are natural areas within Arroyo Trabuco and San Juan Creek. Sudden releases of water due the lowering of the rubber dam can potentially cause erosion within these areas. Additionally, the County’s proposed WQIP identifies Channel Erosion and Associated Geomorphic Impacts as a highest priority water quality conditions and has identified areas within Arroyo Trabuco and San Juan Creek as proposed A8-25

areas for rehabilitation and channel restoration. Please address how these identified areas will be protected.

24. Section 4.2.8, Hydrology and Water Quality (page 3-18): “The project would contribute to the flow reductions.” The project will not reduce flows from entering the channel, but will reduce flows from getting to downstream portions of the channel.
25. Section 7.2, References (page 7-7): “Orange County Department of Public Works (OCPW). 2016a. South Orange County Watershed Management Area (South OC WMA) Water Quality Improvement Plan (WQIP). Available at [http://cms.ocgov.com/gov/pw/watersheds/documents/south_oc_water_quality_improvement_plan_\(wqip\)/default.asp](http://cms.ocgov.com/gov/pw/watersheds/documents/south_oc_water_quality_improvement_plan_(wqip)/default.asp); accessed on December 19, 2016.” As noted above, April 2017 is the most recent version of the WQIP. The Program EIR should reference the most recent version of the WQIP.

OC Public Works – OC Infrastructure Programs – Flood Programs

General Comments

1. Mitigation Measure HYDRO-1 states “SMWD shall coordinate with OCPW prior to finalization of designs to ensure that rubber dam designs are consistent with future channel improvements under consideration by the County including the potential for vertical sidewall channels. SMWD shall obtain an Encroachment Permit from the County prior to installing the rubber dam facilities.” As it relates to this Mitigation Measure, we offer the following comments:
 - a. We recommend that SMWD coordinate with OC Public Works/Infrastructure Programs (OCPW/IP) in the early stages of design of the rubber dams and appurtenant structures to ensure compatibility with OCFCD’s/County’s (1) proposed projects in San Juan Creek (L01) and Trabuco Creek (L02) channels, (2) permit requirements, and (3) schedules.
 - b. Any future improvements to OCFCD/County facilities would be subject to review, approval, and permitting by the County. A Concept Study including preliminary improvement plans should be submitted to OCPW/IP through County Property Permit (CPP) process. Submitted reports should contain the necessary calculations and supporting files, exhibits, maps, tables, and other information necessary to enable a complete review. Particularly of concern are the vertical concrete structures approximately 400 feet in length proposed for each side of the rubber dams that would replace the existing trapezoidal channels at proposed dam locations. Locations and design of the structures must be compatible with all future OCFCD projects and fish passage.
 - c. County review during the permit process is generally limited to the acceptability of the concept, and while all County requirements should be addressed during the final design of the project, the final design should generally adhere to the original concept (i.e., no major deviations).
 - d. An agreement between OCFCD/County and SMWD is required in order to define the terms and conditions under which OCFCD/County will allow/accept channel

- improvements and/or grant rights-of-way (e.g., easement, permit, license, etc.) before the design-build contracts are negotiated and permits can be issued for work with OCFCD/County rights-of-way.
- e. Proposed improvements within OCFCD/County rights-of-way should neither jeopardize the structural integrity of the hydraulic capacity of the channels nor interfere with OCFCD's/County's access, operation and maintenance activities, future repair works or improvements to the channels.
2. The operation and maintenance characteristics of the rubber dams and associated facilities are discussed in general in the Program EIR. An Operation and Maintenance (O&M) Manual should be prepared to clearly define O&M limits, routine and major inspection/maintenance activities and schedules (frequency), operation activities (dry-weather/non-storm and storm flows/flood operations), staffing, Environmental Regulatory Permits for O&M activities, etc.
3. The description of the in-channel construction timeframe is not consistent throughout the document. Some sections state that in-channel construction and maintenance activities will be conducted between June 1 and October 31, (ES-6), while other sections state the construction time frame of April to October (Page 3.3-31). Provide clarification.
4. Page 2-23, Section 2.7.1 Operation, Phase 1, 1st paragraph indicates that the dams would be manually lowered when a significant storm event is forecasted. The storm flows/flood operations section of the O&M Manual should define what rainfall threshold a significant storm event would consist of. Quantitative forecasts from the National Weather Service may be used to compare established rainfall threshold that may be used to trigger deflation of the rubber dams. The O&M Manual should include monitoring stages and parties responsible for the operation of the dams especially during storms.
5. Page 2-24 Section 2.7.2 Maintenance, Phase 1: The text includes description of the creek bottom maintenance immediately upstream of each rubber dam. SMWD needs to clarify the extent of this maintenance area. This should include sediment and vegetation removal that may result due to the presence of these proposed structures. The O&M Manual should clearly identify all operation and maintenance activities along with limits and frequency of activities. Long term maintenance permit approvals be required for sediment removal.
6. OCPW/Flood Programs' previous comment on the NOP still apply including OCFCD/County requirement to review and comment on the draft regulatory permits for the proposed project before they are finalized. This is to ensure that the permits will not have onerous requirements and environmental commitments such as mitigation on OCFCD/County as the owner of portions of San Juan Creek and Trabuco Creek Channels rights-of way.
7. In consideration of avoiding risk of accidental flooding of adjacent homes and businesses, provide information about safeguards in the project that would be in place if dams cannot be lowered due to mechanical malfunction or other reason.

Report Text Comments

1. Page 2-1, Section 2.2 Project Location:
 - a. Figure 2-1: Please identify/label Oso Creek in the map.

- b. 3rd sentence: Suggested text – “The headwaters of San Juan Creek and Arroyo Trabuco originate in the Cleveland National Forest near the county border of Orange and Riverside. The main stem San Juan Creek originates at an elevation ...”
- A8-40
2. Page 2-9, Rubber Dams and Associated Facilities, 3rd sentence: Please change “Orange County Department of Public Works (OCPW)” to “Orange County Flood Control District (OCFCD)”.
- A8-41
3. Figures 2-4a, 2-4b, and 2-4c:
- a. The San Juan Creek channel ROW belongs to OCFCD, not OCPW. Please revise labels corresponding to delineated ROW boundaries as appropriate.
 - b. Please see also comment A.1 above.
- A8-42
4. Page 2-14:
- a. 1st paragraph, last sentence: Please correct typo – “been” instead of “by”.
 - b. 3rd paragraph, 2nd sentence: Please change “OCPW” to “OCFCD”.
- A8-43
5. It appears that Figures “5-2” and “5-3” should be labeled “2-5” and “2-6” respectively. Please verify and revise as appropriate.
- A8-44
6. Page 2-23, Phase 1, 2nd paragraph: Please define the acronym APM.
- A8-45
7. Page 2-24 Subsequent Phases, 1st sentence: Please correct typo – “identical” instead of “identically”
- A8-46
8. Page 2-25, Section 2.8 Discretionary Approvals Required for the Project, 6th bullet point: Please revise the text to read, “OCFCD (OCPW/County Property Permits), encroachment permit”
- A8-47
9. Page 3.8-1, Surface Hydrology, 2nd sentence: Please revise the text to read “The San Juan Watershed is ... in the Cleveland National Forest to the east of the Pacific Ocean ...”
- A8-48
10. Page 3.8-4, Groundwater Levels and Flow, last paragraph: Please delete “of the capacity”.
- A8-49
11. Page 3.8-7, San Juan Basin 2016 Adaptive Pumping Management Plan, 3rd and 4th paragraphs: Well locations are not shown in Figure 3.8-3.
- A8-50
12. Page 3.8-18, Orange County Department of Public Works Flood Control Encroachment Permit:
- a. Please delete “Control” in the heading.
 - b. 1st sentence: Please insert “OCFCD or” before “county”
 - c. 3rd sentence: Please revise the text to read “If the application is ..., it is routed to applicable County service areas for review such as Infrastructure Programs, Operations & Maintenance, Environmental Resources, etc.”
 - d. 4th sentence: Please change “departments” to “service areas”.
- A8-51

13. Page 4-17, Section 4.2.8 Hydrology and Water Quality, 2nd paragraph, 2nd sentence: Please revise the text to read “This project involves ... from Stonehill Drive to La Novia Bridge and in Trabuco Creek from confluence with San Juan Creek to Ramon Street.”

A8-52

OC Public Works – OC Infrastructure Programs – Traffic & Design

1. Construction on OCFCD’s San Juan Creek Phases 4, 5 and 6 Project is currently scheduled for completion in May 2019.
2. Text and graphics within the Program EIR should indicate that this is in OCFCD (Orange County Flood Control District) right-of-way, not in Orange County Public Works (OCPW) right-of-way.
3. Coordination is needed with OCPW to ensure that the grade at which the rubber dams are constructed is compatible with the equilibrium slope of the channel and the Invert Stabilization Project.
4. All dams and fish chutes will be operated and maintained by SMWD.
5. OCPW Operations & Maintenance may require access to control the deflation of the dams if needed.
6. If damages and fish chutes or operations damage any portion of the flood facility, SMWD will be responsible for repairs.
7. Future removal or replacement of all dams and fish cutes will be the responsibility of SMWD.
8. During construction, SMWD will need to allow for OCPW Operations & Maintenance emergency access.
9. Safety signs such as “Stay Out of Water” may be needed along with contact information.
10. Is the study based on hydrologic expectation that account for climate change and sea level rise?
11. Final height of rubber dams will be contingent on OCPW approval.

A8-53

If you have any questions regarding these comments, please contact Jenna Voss at (714) 955-0652 or Cindy Rivers at (714) 955-0674 in South Orange County Watershed Management Area; Ariel Corpuz at (714) 647-3966 or James Tyler at (714) 647-3966 in Flood Programs; Samantha Mackey at (714) 647-3974 or Edward Frondoso at (714) 245-4596 in Traffic & Design; or Ashley Brodkin at (714) 667-8854 in OC Development Services.

A8-54

Sincerely,



for Richard Vuong, Manager, Planning Division
OC Public Works Service Area/OC Development Services
300 North Flower Street
Santa Ana, California 92702-4048
Richard.Vuong@ocpw.ocgov.com

cc: Colby Cataldi, OC Public Works – Development Services
Joanna Chang, OC Public Works – Development Services
Ashley Brodkin, OC Public Works – Development Services
Jenna Voss, OC Public Works – South OC Watershed Management Area
Cindy Rivers, OC Public Works – South OC Watershed Management Area
Ariel Corpuz, OC Public Works – Flood Programs
James Tyler, OC Public Works – Flood Programs
Samantha Mackey, OC Public Works – Traffic & Design
Edward Frondoso, OC Public Works – Traffic & Design
Nardy Khan, OC Public Works – Infrastructure Programs



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February 22, 2018

Mr. Tom Barnes
Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Subject: San Juan Watershed Project Draft Program Environmental Impact Report (SCH No. 2016121001)

Dear Mr. Barnes:

Thank you for providing the Orange County Transportation Authority (OCTA) with the Draft Program Environmental Impact Report (Draft PEIR) for the San Juan Watershed Project (Project). On June 30, 2017, OCTA provided comments on the Project's Notice of Preparation. OCTA appreciates Santa Margarita Water District's (SMWD) acknowledging receipt of the comments in the Draft PEIR.

A9-1

After review of the Draft PEIR, it was difficult to locate responses to OCTA's previous questions/comments. OCTA's primary concern with the Project is that the proposed dams could potentially place additional stressors and impacts on the \$1.5 million OCTA-funded restoration project, located directly upstream (less than one mile) from the northernmost limits of the Project area. This project is funded through Measure M2 (M2), Orange County's half-cent transportation sales tax, and is tied to M2 freeway projects.

A9-2

OCTA is concerned that the proposed dams could lead to increased water ponding and general changes in the natural hydrology. Although the Draft PEIR acknowledged there are sensitive native riparian vegetation communities in the Project area, and attempted to address some of OCTA's concerns under Section 3.3-2, there remains questions as to how the Project's potential impacts will be mitigated. They include:

- How can groundwater production associated with the Project be implemented in a way to not negatively affect upstream riparian habitat?
- What assurances can be provided for the San Juan Basin Authority's ongoing monitoring of riparian vegetation? The Draft PEIR stated monitoring is expected.
- The type of monitoring conducted needs to be specified.

A9-3

A9-4

Comment Letter A9

Mr. Tom Barnes
February 22, 2018
Page 2

- Who determines the thresholds for habitat impacts and what are the triggering mechanisms? How would the Project address negative impacts as a result of the monitoring efforts? A9-4
- Changes in the hydrology as a result of the Project could negatively affect OCTA's project, which may result in additional funds being expended. A9-5
- The slowing and ponding of water from the Project could attract non-native invasive aquatic species which may have a negative impact on the OCTA project. Will this also be monitored and will the species be eradicated? A9-6
- The statement "it is expected the ongoing monitoring of riparian vegetation would ensure groundwater production associated with the proposed project would be performed in a manner that is not detrimental to upstream riparian habitat" is vague. OCTA requests that a more direct and specific response be provided. A9-7

We would like assurances that the Project will not impact OCTA's project. OCTA has a responsibility to meet success criteria in order to receive mitigation credits from the wildlife agencies. We would appreciate further coordination with SMWD to ensure appropriate steps are taken to avoid or minimize the Project's impacts on OCTA's project. If you have any questions or comments, please contact me at (714) 560-5907 or at dphu@octa.net. A9-8

Sincerely,



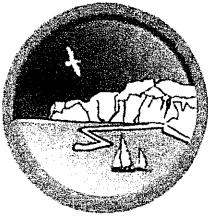
Dan Phu
Manager, Environmental Programs

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FEB 26 2018

SMWD

SOUTH COAST



WATER DISTRICT

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Director

February 22, 2018

Mr. Tom Barnes
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017
tbarnes@esassoc.com

Subject: San Juan Watershed Project, Draft Program Environmental Impact Report
(State Clearinghouse No. 2106121001)

Dear Mr. Barnes:

South Coast Water District (District) appreciates the opportunity to provide Santa Margarita Water District (SMWD) with comments on the Draft Program Environmental Impact Report (PEIR) for the San Juan Watershed Project (Project). The District is a 20-percent participant in the Project along with SMWD, and is a responsible agency for the Project. The District also appreciates recent expressions of support and potential partnership by SMWD on the District's Doheny Ocean Desalination Project.

The Project would develop facilities to manage surface water resources to enhance groundwater resources of the San Juan Groundwater Basin. The Project would increase the capture and storage of urban runoff and stormwater, optimize the use of recycled water for beneficial use, minimize the potential for undesired impacts, and augment local groundwater supplies to reduce the region's dependence on imported water.

The District values its partnership with SMWD on the Project and appreciates the issues being addressed and the information provided in the PEIR, and has the following comments for SMWD's consideration:

Doheny Ocean Desalination Project: In the PEIR's discussion of the Doheny Ocean Desalination Project (p. 5-4), it would be appropriate to cite the various regional water supply feasibility studies, all of which identified the Doheny Ocean Desalination Project as a viable solution. The PEIR should discuss the recent findings of the District's Water Reliability Working Group, a diverse and independent community-led stakeholder group that ranked the Doheny Ocean Desalination Project above all other available water supply alternatives. Information on the Water Reliability Working Group is available at this web location
https://www.scwd.org/about/governance/water_reliability_working_group/default.htm.

A10-1

A10-2

A10-3

Further, the District agrees that the South Orange County region warrants development of a diverse water supply portfolio and that both the San Juan Watershed Project and the Doheny Ocean Desalination Project could benefit the region's water supply reliability. The District requests that the PEIR's statement regarding the "uncertain implementation schedule and an uncertain cost of water delivery" be clarified, in that the Doheny Ocean Desalination Project does have an estimated project delivery schedule and estimated costs for water production. See, <http://scwd.org/depts/engineering/projects/water supply projects/oceandesal3/default.htm>.

A10-3

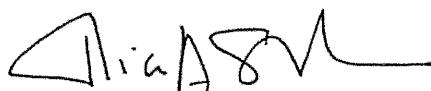
As noted, the District has formed the independent, stakeholder-driven Water Reliability Working Group to investigate and rank available local water supply reliability alternatives. The group concluded that "[a]s an individual project, Doheny Desal ranks 1st by high margins" when both system and supply reliability benefits are considered. See, (<http://www.scwd.org/services/drinking/supply/water reliability/presentations.htm> [Water Reliability Working Group Presentation 08-22-17]). The SCWD Water Reliability Study Technical Memorandum Report, published on December 21, 2017, also concluded that the overall ranking of the Doheny Ocean Desalination Project exceeded that of other available supplies. (<https://www.scwd.org/civicax/filebank/blobdload.aspx?blobid=8044>).

A10-4

South Coast Water District appreciates the opportunity to provide these comments on the PEIR, and looks forward to progressing with the environmental review for the Project, as it and SMWD work cooperatively to develop long-term water supply reliability for South Orange County. If you have any questions please do not hesitate to contact the undersigned (949-499-4555).

A10-5

Sincerely,



Rick Shintaku
Acting General Manager
South Coast Water District

cc: Daniel Ferons, SMWD, General Manager
Don Bunts, SMWD, Deputy General Manager



South Orange County Wastewater Authority

February 22, 2018

ESA
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Attention: Mr. Tom Barnes

Re: San Juan Watershed Project
Draft Program Environmental Impact Report
State Clearinghouse No. 2016121001

Mr. Barnes:

Thank you for the opportunity to review and comment on the San Juan Watershed Project Draft Environmental Impact Report (EIR). Your document has very clearly defined a project which offers the potential to enhance local water resources. Our comments are separated between the Phase I Project-Level and the Subsequent Phase Program-Level.

A11-1

Phase I Project-Level

The extent of the Phase I Project which is largely devoted to the capture and recharge of storm water runoff does not impact the operations of the South Orange County Wastewater Authority (SOCWA). The project exists within the Lower San Juan Basin which is covered by the Master Water Recycling Permit SOCWA holds. The Salt and Nutrient Management Plan, which is a requirement of the Water Recycling Permit, has a goal to "Continue and expand existing programs to desalt groundwater in the Lower San Juan Basin to increase local supply". SOCWA is in agreement that Phase 1 moves closer to achieve the goal and is consistent with the permit requirements for SOCWA. It is noted that Phase I might include modification of the City of San Juan Capistrano Groundwater Treatment Facility. This facility, as well as the South Coast Water District Groundwater Recovery Facility, has a Special Wastewater Discharge Permit administered by SOCWA which will be reviewed and modified as needed based on proposed design changes when or if they occur. In addition, brine discharged from the facility into San Juan Creek Ocean Outfall system is regulated through the SOCWA NPDES permit. Potential modifications to the groundwater treatment facilities should be reviewed for potential impacts to the permits. Therefore, our agency does not have comment on the Phase I Project.

A11-2

Subsequent Phase Program-Level

The Subsequent Phases of the project may involve the extension of the project to process and transfer recycled water for recharge into the San Juan Basin. The EIR identifies several SOCWA treatment facilities that might be used as a source for the

A11-3



South Orange County Wastewater Authority

recycle water. SOCWA has already done some conceptual planning for the improvements at two facilities that would be needed to create a source of recycled water for indirect potable reuse. Some of these modifications will generate a wide range of temporary and permanent impacts to be addressed in a future environmental planning document including GHG emissions, noise, aesthetics, traffic and air quality. For a Program-Level analysis it may simply be noted that treatment modifications would require a more detailed environmental analysis in a future document.

A11-3

If you have any questions regarding these comments please contact me at (949) 234-5411 or bpeck@socwa.com.

A11-4

Sincerely,

A handwritten signature in black ink, appearing to read "B Peck".

Brian Peck, P.E.
Director of Engineering



SAN JUAN BASIN AUTHORITY

26111 Antonio Parkway • Rancho Santa Margarita, CA 92688 (949) 459-6400 FAX (949) 459-6463

February 23, 2018

Mr. Tom Barnes
Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles, CA 90017

Subject: San Juan Watershed Project
CEQA Draft Program Environmental Impact Report DPEIR
State Clearinghouse No. 2016121001
Comments by San Juan Basin Authority

Dear Mr. Barnes:

Thank you for the opportunity to review Santa Margarita Water District's (SMWD's) San Juan Watershed Project Draft Program Environmental Impact Report.

San Juan Basin Authority (SJBA) is a consortium of four local South Orange County water agencies operating collaboratively under a Joint Exercise of Powers Agreement since 1971. One of those member agencies is SMWD, the project's Lead Agency relative to CEQA. SJBA manages the groundwater basin that extends along San Juan Creek and its tributaries, from the Santa Ana Mountains to the Pacific Ocean.

The purpose of this letter is to provide comments on the subject DPEIR. As SJBA's Administrator, I have reviewed the DPEIR and have the following suggestions/comments relative to groundwater resources in the San Juan Basin

The DPEIR is well written and articulates well the potential environmental concerns and, where appropriate, mitigation to be implemented to reduce the impacts to a level of no significance. It is clear that SMWD and its consultants have spent a great deal of effort to address the issues with which SJBA would be concerned. With that said, there are a few items deserving further discussion, and in some cases, further analysis.

1. Rights to Additional Percolated Groundwater

The DPEIR describes the Permits for Diversion and Use of Water held by SJBA and South Coast Water District (SCWD), along with current work performed by SJBA to monitor groundwater quality and quantity in the San Juan Creek watershed under those permits. The permits dictate how much groundwater can be pumped each year and under what conditions.

The DPEIR correctly states that the groundwater pumpage allowed under either permit has not been fully exercised in recent years. The City of San Juan Capistrano has been the sole groundwater pumper under the SJBA permit and SCWD's permit

A12-1

A12-2

A12-3

is exclusively held by SCWD. Neither agency currently has the pumping/treatment capacity to do so in the near future. And, the permits were issued taking into consideration existing natural recharge conditions in the San Juan Basin (the underground streams underlying San Juan Creek and its tributaries), not any future enhanced recharge. So, the permits do not seem to address how enhanced percolation/storage would be allocated.

A12-3

When the San Juan Watershed Project is in operation in the future, it is expected that additional storm water and recycled water will be percolated into the groundwater basin, above and beyond any current natural recharge volumes. While it is not strictly a subject for CEQA analysis, it is critical that SMWD work with SJBA, SCWD, and other groundwater rights holders in the Middle and Lower Basins to identify and agree to a method for allocating any “new” groundwater storage/production created by the Project. This would allow compliance with the water rights permits to continue without potential impacts to water levels in the groundwater basin.

A12-4

Impact No. 3.8-2 correctly asserts that the Project would likely increase the availability of groundwater to be produced, using the Adaptive Pumping Management (APM) plan to manage the basin. However, it does not mention how that increased availability would be allocated. Please describe in the DPEIR what tools or methods could be used to allow water rights holders to jointly determine how the enhanced storage/production will be allocated.

A12-5

2. Bedrock High Investigation

SJBA has contracted Wildermuth Environmental, Inc. to conduct an investigation to determine if a “bedrock high” exists perpendicularly across a portion or all of the Lower San Juan Creek Watershed, in the area just north of Stonehill Drive. A bedrock high is a subterranean geologic feature that can slow or block flow within subterranean streams like the San Juan Basin.

A12-6

Preliminary results have been obtained from the investigation in the time since the DPEIR was released. The study includes analysis of the data and maps and cross sections of the feature. Further, SJBA has approved a contract that would provide additional analysis to determine how such a feature, if documented, can affect the characterization of the San Juan Basin. However, WEI has not yet been given notice to proceed with that contract. Please describe in the PDEIR how the results of the bedrock high investigation would be considered in the final design of the Project.

San Juan Watershed Project DPEIR Comments

February 23, 2018

Page 3

Again, thank you for the opportunity to comment on the Draft Program Environmental Impact Report for this important water supply project for South Orange County. Please let me know if there is any information you need from SJBA to complete your CEQA analysis and report.

Sincerely,



Norris Brandt, PE
Administrator

cc: SJBA Board of Directors
SJBA Technical Advisory Group



City of San Clemente Community Development

Amber Gregg, City Planner

Phone: (949) 361-6196 Fax: (949) 361-8309

GreggA@san-clemente.org

February 26, 2018

Mr. Tom Barnes
626 Wilshire Boulevard Suite 1100
Los Angeles, CA 90017

Sent electronically via email to: tbarnes@esassoc.com

Subject: City of San Clemente Comments on the San Juan Watershed Project DEIR

Dear Mr. Barnes:

The City of San Clemente (City) appreciates the opportunity to review and provide comments on the Draft Environmental Impact Report (DEIR) prepared for the proposed San Juan Watershed Project (Proposed Project) to be implemented by the Santa Margarita Water District (District).

A13-1

The City is located partially in, and directly south and adjacent to, the San Juan Watershed. The San Juan Watershed provides a significant source of coarse-grained, beach quality sediment for the City's beaches, which are located downcoast of the San Juan Creek discharge point at Doheny State Beach. There is a lack of beach sediment (net sediment deficit) within the Oceanside Littoral Cell and, as a result, the shorelines are generally in an eroded condition. Therefore, the City is concerned that any project that would have the potential to reduce the existing/historical sediment load to the beach could have an adverse effect on shorelines in the vicinity of the City. Moreover, in the future as sea level rises, maintaining wide sandy beaches will become a key component of the City's sea-level rise adaptation strategy. Since the sandy beach functions as a natural buffer between the ocean waves and upland areas, the City cannot support any project that would reduce the availability of beach quality sediment (sand) reaching the coast now or in the future.

A13-2

A13-3

The DEIR states "...three rubber dams within San Juan Creek would act as in-stream detention facilities for both dry weather and wet weather flows within San Juan Creek and Arroyo Trabuco. The dams would promote instream recharge of the groundwater basin by allowing for the ponded water to naturally infiltrate into the stream bed." To the extent that the proposed project affects surface water flows from San Juan Creek, sediment that would otherwise reach the beach would be retained upstream behind the dams and would be prevented from naturally reaching the beach. Maintenance activities for the proposed rubber dams are described on Page 2-24 of the DEIR. The second sentence of the paragraph describing Phase I maintenance activities states, "Maintenance activities in and around the rubber dam structures would include periodic, as-needed removal of accumulated sediment and debris, inspection and replacement of the riprap scour protection, and inspection and maintenance of all concrete structures." With respect to this sediment removal maintenance activity there is no information presented regarding the frequency and/or volume of sediment that is expected to be removed nor is there any information regarding where the sediment would be taken to for beneficial use and/or disposal (for any fine grained material too small in size to be considered beach quality sediment). In addition, there is no information presented regarding the sandy portion of accumulated sediment that, if transported to the ocean, would nourish the region's beaches.

After reviewing the DEIR for the Proposed Project, it does not appear the potential effects at the mouth of San Juan Creek relative to reductions in sediment deposition and increased shoreline erosion have been evaluated. Therefore, it is unclear what effect this potential project will have on reducing the volume of sediment reaching the coast. An analysis of this potentially significant impact must be included in the EIR.

Specifically, the City is requesting that an analysis be conducted to determine the impact of sediment removal on the natural transport of sediment to the beach with a specific focus on the sandy portion of this sediment. This analysis should be included in the EIR as part of the CEQA Appendix G Thresholds checklist section addressing impacts to Geology, Soils, and Seismicity as the sand represents "a known mineral resource that would be of value to the region and the residents of the state. This analysis should include estimates of the volume of sediment that would be removed from the creek by the project, the portion of this sediment that is sand, and the frequency of this sand removal. This information should be used to estimate the impact of the project on the volume and rate of sediment (sand) delivery to the shoreline at the ocean mouth of the San

A13-4

A13-5

A13-6

Juan Creek. If the impact is determined to be significant then measures should be developed to mitigate the impact. Such mitigation measures could include continued transport of accumulated sediment via natural creek flows, transport of removed sediment to the creek mouth or targeted beaches, and/or funding for beach nourishment activities along the impacted shoreline.

A13-6

Thank you in advance for your consideration of the City's request to include this additional project impact analysis in the EIR. Please call me with any questions at 949-361-6196.

A13-7

Sincerely,



Amber Gregg
City Planner
City of San Clemente

CC: Mayor and City Council
Scott Smith, City Attorney
Cecilia Gallardo-Daly, Community Development Director
Clifton Davenport, California Coastal Sediment Management
Workgroup
Chris Potter, California Natural Resources Agency



C.C.R.P.A.
Protecting The Past For The Future

P.O. Box 54132
Irvine, CA 92619-4132

California Cultural Resource Preservation Alliance, Inc.
An alliance of American Indian and scientific communities working for
the preservation of archaeological sites and other cultural resources.

January 5, 2018

Mr. Tom Barnes
ESA/Southern CA Water Group

Re: Draft Programmatic Environmental Impact Report for the San Juan Watershed Project

Dear Mr. Barnes:

Thank you for the opportunity to comment on the above-mentioned project. As indicated in the cultural resources section of the document, the proposed project area is located within an area of known archaeological sensitivity. During pre-contact times, Juaneno/Acjachemen villages are known to have been located along streams and especially at the confluence of two streams, where a potential staging area and control building are proposed (Cultural Resources Appendix, pg. 39). Although this area has been developed for a park and bike/pedestrian paths, there is a high potential for the presence of buried archaeological resources. Buried archaeological materials may also be present throughout the proposed Area of Potential Effect (APE), therefore, we strongly support the Cultural Resources Mitigation Measures calling for monitoring by a qualified archaeologist and Native American during all ground disturbing. We support all the other Cultural Resources Mitigation Measures.

B1-1

Please include the mitigation measures regarding compliance with PRC Section 5097.98 and Health and Safety Code Section 7050.5 in 3.4-4, pg. ES-11 of the Cultural Resources Mitigation Measures and Pg. 3.4-24. They erroneously say, "None required". We also have concerns regarding the lack of information regarding the construction of pipelines associated with the Phase I construction of three masonry control buildings.

B1-2

Finally, pending the inclusion of the mitigation measures regarding human remains, we strongly support and commend ESA for the well formulated cultural resources mitigation measures, especially the statement within CUL-4, pg. ES-9, that avoidance and preservation in place shall be the preferred manner of preservation.

B1-3

Sincerely,

Patricia Martz, Ph.D.
President

February 23, 2018

Mr. Tom Barnes
Environmental Science Associates
626 Wilshire Boulevard, Suite 1100
Los Angeles CA 90017



Submitted via email: tbarnes@esassoc.com

Re: California Trout Comment Letter in response to Draft Program EIR

The Santa Margarita Water District (SMWD), in conjunction with South Coast Water District (SCWD), is proposing to implement a multi-phase San Juan Watershed Project (Project) that would develop facilities to manage surface water resources to enhance groundwater resources of the San Juan Basin. The first phase includes installation of three rubber dams within San Juan Creek Creek to enhance instream groundwater recharge with captured stormwater. The San Juan Creek Watershed is located primarily within Orange County and covers 176 square miles and has a stream length of 29 miles (San Juan Creek Watershed Workplan 2013). Its major tributary is Trabuco Creek, which covers 54 square miles and extends 23 miles into the rugged Santa Ana mountains in the Cleveland National Forest.

B2-1

California Trout fully supports projects that enhance the environmental quality of the San Juan Creek watershed and provide for integrated water management. This letter presents comments regarding scope and content of project information being presented for evaluation of impact to environmental resources in the Draft Program Environmental Impact Report (EIR). Our comments focus primarily on the Project's potential negative impact on endangered Southern California steelhead and other native aquatic species in the San Juan Creek watershed. These comments are informed by technical experts in the field.

1. The Draft Program EIR (DPEIR) does not adequately document or evaluate project-specific or cumulative impacts associated with other relevant projects in the San Juan Creek Watershed of which Santa Margarita Water District is aware. These documented projects are in design and/or implementation stage. In accordance with CEQA, the PEIR must consider reasonably foreseeable projects. These reasonably foreseeable projects include Orange County Flood Control District's invert stabilization project in lower San Juan Creek and Trabuco Creek; OCTA's Metrolink bridge replacement project just upstream of the confluence of San Juan and Trabuco Creeks; CalTrout and Trout Unlimited's Metrolink and Interstate-5 Trabuco endangered steelhead fish passage projects in design stage; United States Forest Service's check dam removal and fish passage enhancement activities in upper San Juan and Trabuco Creeks; San Juan Basin's Alternative 6 saltwater intrusion barrier operation, and South Orange County's Water Quality Improvement Plan. Clearly addressing the relationship of San Juan Watershed Project with these projects in terms of environmental impact will provide a more adequate representation of Project impact and mitigation actions required.

B2-2

2. The DPEIR Project Objectives do not include water resource management objectives relative to ecosystem and natural resource management. Endangered steelhead habitat and passage objectives should be addressed in parallel to the design objectives in the PEIR Project Objectives. B2-3
3. The rubber dams are acknowledged to be fish migration barriers without some form of mitigation. The DPEIR states that “each of the proposed rubber dams would be designed to include a fishway (i.e., fish ladder or other effective means of removing the dam itself as an impediment). Fishways will be designed in consultation with NMFS and in accordance with published design criteria and guidelines (NMFS 2008).” This does not represent an adequate understanding of the regulatory process to minimize environmental impacts, particularly the engineering and design rigor in protecting the anadromous life history form of salmonids. Moreover, the DPEIR conceptual designs are not of sufficient detail to evaluate their effectiveness in supporting passage of juvenile and adult steelhead as well as outmigration of smolts. For example, fish passage design criteria should be developed that include low and high fish passage design flows, hydraulic criteria for the fishways, hydraulic criteria for the tailwater and headwater conditions, and attraction flow criteria. The design flow range for passage should be defined and related to expected percolation losses and fishway operating flows. The relationship of the fishway exit (upstream end) to the stream bed and the dam crest is an important design consideration but is not provided in the DPEIR. The profile of the fishway should be coordinated with the expected difference in headwater and tailwater elevations across a fish passage design flow range. The profile in the conceptual drawings appears to have a drop of only about 4 feet (2.5% for 146 feet) compared to expected water surface differences on the order of nine feet. Alternatively, the typical pool geometry shows a slope of 10%, which would produce an excessive drop of 14.6 feet. b2-4
4. BIO-5 in the DPEIR states that “The Santa Margarita Water District shall coordinate with NMFS and OCPW to participate in steelhead habitat restoration priorities within the San Juan Creek watershed. Participation may include implementation of in-channel fish passage improvements within San Juan Creek and mutually agreed upon funding and/or planning assistance commensurate with SMWD’s level of effect to assist the resource agencies with the Steelhead Core 1 Recovery Population goals.” The DPEIR conclusion of *Significance Determination: Less than significant with mitigation* is unsubstantiated. This statement is vague and cannot reasonably be used to identify and quantify what impacts are being mitigated. Moreover, Mitigation Measure Bio-5 has an objective of increasing passage days over existing conditions. This presumably could be at least partially accomplished with channel modifications to lower the minimum flows needed for passage. The accurate establishment of existing passable flow thresholds is important to establish baseline conditions for this mitigation measure and to inform the design of passage facilities at the dams and link to verification of actual passage flow thresholds in the field (rather than relying solely on the hydraulic models). B2-5
5. The DPEIR states that, “Up to nine additional rubber dams would be constructed within San Juan Creek and/or Arroyo Trabuco during subsequent phases of the proposed project. The additional rubber dams would be similar in design as described above for Phase I rubber dams. The locations of the additional rubber dam facilities are not known at this time.” This ambiguity B2-6
- B2-7
- B2-8
- B2-9

- impairs assessment of potential impacts to aquatic organism mobility, riparian vegetation, or other environmental components. Further detail of the dams' configuration, location, and effects on groundwater and stream flow is needed. The PEIR should address these project details and impacts.
6. The DPEIR states that, "Phase I rubber dam construction is anticipated to require approximately 250 days total, beginning in early 2018 and ending in early 2019. Since San Juan Creek and Arroyo Trabuco are active drainage channels, the channel portion of construction would be performed outside the rainy season between the months of April and October to avoid potential impacts to water quality. Rubber dam construction is anticipated to require approximately 10 construction workers per dam." The Best Management Practices (BMPs) for rubber dam implementation and more generally other impact minimization and avoidance measures need to be clearly described, typically as part of the project description, to facilitate adequate environmental analysis.
7. The DPEIR states that, "The APM would provide annual guidance on the management of groundwater production within the San Juan basin in order to comply with the water rights permits held by the SBJA and SCWD. The APM would allow the SBJA and SCWD to assess annual groundwater production and manage storage within the basin as well as prevent seawater intrusion and maintain groundwater levels which are protective of riparian vegetation ." There is no mention of minimum instream flows that are protective of fish and the aquatic ecosystem, nor the effects of groundwater on surface flow.
8. In the DPEIR Appendix D Biological Technical Report, the Fish Passage Assessment states that "Unlike Trabuco Creek these are not discrete barriers associated with grade control structures or other impediments; the barriers are created by the shallow dimensions of the naturally-formed low flow channel." The fish migration assessment uses long-term hydrologic simulation, breach analysis, and stream hydraulics to assess migration windows for the project area. This type of analysis is valuable. However, the Wildermuth Environmental hydrologic model is mentioned in the report, but no details are provided on model development or calibration, and a specific reference is not included. The model is fundamental to the determination of passage windows, and a copy of the model or the reporting associated with it should be made available for review to understand this basis.
9. Mitigation Measure Bio-1 requires development of a Fish Rescue and Relocation Plan to reduce impacts on steelhead and arroyo chub both during construction and in normal operations of the dams. The dams will be in operation frequently and for long durations during the steelhead migration season. This measure should be effective for construction impacts but the practicality of this approach during normal operations should be assessed by fisheries biologists, including the resources required and the ability to identify and rescue fish in inundated and potentially turbid conditions. The operation of the dams could rapidly change flow rates in the channel. An assessment of stranding potential associated with project operation should be used to consider the need for criteria for flow ramping. These criteria could potentially affect project yield and the simulated flows in the hydrologic model used for the passage assessment.
10. The DPEIR should provide visual renderings of before/after rubber dam installation in the creek. The aesthetics and visual impacts analysis is lacking analysis.

11. The DPEIR should identify the approval/permits required and how ESA, CESA, and other regulatory and other approvals such as TMDL compliance will be achieved.
12. The PEIR Fish Passage Assessment states that, "Under with-project conditions steelhead migration between the ocean and the upstream inundation limit on Trabuco Creek is possible 8.1 days per year on average (a 0.6 day/year or 8% reduction from baseline conditions), with migration between the ocean and San Juan Creek possible 8.4 days per year (a 0.7 day/year or 8% reduction). The reduction in passage days is mostly due to a reduction in days when the creek has sufficient water depth, with the reduction in lagoon openings playing a smaller role. In 53% of years the proposed project would not change the number of passable days, in 34% of years there would be one fewer passable day, in 13% of years 2 fewer days, and in 1% of years four fewer days. There were three years (1951, 1999 and 2013) when the project condition resulted in the complete loss of migration days in a year that would otherwise have had one migration day. Overall, the results suggest that steelhead migration in San Juan Creek is very constrained under existing conditions, and will be slightly adversely affected by the proposed dams, provided that the dams are themselves passable."
13. The DPEIR does not address a number of comments submitted during the NOP response period relating to environmental impact. In accordance with CEQA, the DPEIR must adequately address comments. For example, elements of CDFW comment #5, NMFS comment #2, City of San Juan Capistrano comment #8, Orange County Public Works comment #10, California Trout comment #15, Trout Unlimited comment #17, and U.S. Fish and Wildlife Service comment #3 were not addressed in the DPEIR.

We appreciate the opportunity to submit these comments in response to the Draft Program Environmental Impact Report for the San Juan Watershed Project.

Respectfully submitted,

Sandra Jacobson, Ph.D.
 California Trout
 South Coast Steelhead Coalition Manager
sjacobson@caltROUT.org

Cc: Mary Larson, California Department of Fish and Wildlife
 Darren Brumback, National Marine Fisheries Service
 Mark Capelli, National Marine Fisheries Service
 Clark Winchell, U.S. Fish & Wildlife Service - Carlsbad
 Bob Blankenship, Trout Unlimited – South Coast
 George Sutherland, Trout Unlimited – South Coast
 Curtis Knight, California Trout
 Gaby Roff, California Trout

B2-16

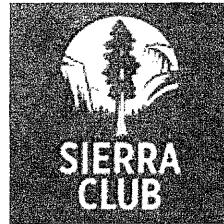
B2-17

B2-18

B2-19



ORANGE COUNTY
COASTKEEPER®



February 22, 2018

Via email to:

Tom Barnes; ESA
626 Wilshire Boulevard, Ste. 1100
Los Angeles, CA 90017
Telephone: 213-599-4300
Fax: 213-599-4301
tbarnes@esassoc.com

Re: San Juan Watershed Project EIR Comments

Dear Mr. Barnes:

Orange County Coastkeeper (“Coastkeeper”) is a nonprofit clean water organization with the mission to protect and promote sustainable water resources that are swimmable, drinkable, fishable and sustainable. The Sierra Club has the mission to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. After reviewing the Draft Environmental Impact Report for the San Juan Watershed project, we have the following comments:

1. Our organizations strongly support the beneficial uses of San Juan, Trabuco and Oso Creeks as defined by the San Diego Regional Water Board. These uses include agricultural and municipal supply, recreation, and warm and cold water wildlife habitat. While the creeks serve multiple purposes, including flood control, that function should not discount their ecological functions and values. The EIR needs to do a better job of describing how the project will improve the function of these creeks to support these beneficial uses not just maintain current degraded conditions.
2. Section 3.8 Hydrology at page 3.8-21 states “Recharge into the groundwater basin would eliminate pathogen concentrations, since underground formations act as natural filters to remove many physical, biological and chemical pollutants from water as it moves through the soil”. The EIR should discuss how the project will deal with upstream illicit dry weather runoff inputs and stormwater pollution discharges. This discussion should include confirmation that this project is not a pollution BMP and will not provide regulatory relief to upstream agencies to meet all water requirements at their discharge sites. This project should not be seen as an excuse to neglect water quality above the project area.

B3-1

B3-2

B3-3

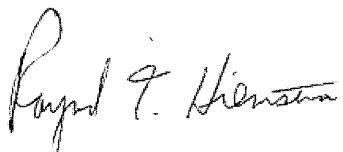
February 22, 2018

Page 2 of 2

3. The section of the creek within the project area has been highly modified for flood control purposes, with a resulting loss of instream and riparian habitat. A priority for our organizations is functioning stream ecosystems and this project presents the opportunity to restore stream and riparian habitat in the Phase 1 project area. In section 3.1 Aesthetics, there is a discussion of mitigation for potential trash graffiti and vandalism. Section 3.3 Biological impacts discusses mitigation for 2.2 acres of habitat in the Phase 1 project area. The project should include creek restoration such as roosting trees along the creek above the banks and low lying native vegetation in the channel as mitigation for aesthetic and environmental impacts. Contributing funds to a mitigation bank for off site mitigation should be avoided.
4. While Arroyo Toads were not observed in the Biological Survey Area, Arroyo Toad habitat does occur in the larger program-level area covered by the EIR. The EIR should include specific information on the potential impacts to the Arroyo Toad and its habitat. It should also include a discussion on potential mitigation for these impacts.
5. Redirecting storm water and urban runoff to flow into the groundwater reservoirs may cause de-watering of the area below the project area. The discussion in section 3.8-3 on page 3.8-24 should include detail on how much de-watering may happen below the project area and what the affects may be on biological resources, geology and air quality (e.g. cause drying of the earth and dust in the air), and surrounding water sources.
6. Recycled water that “meets state regulations” is mentioned as a potential input to the creek for infiltration. It is critical that this recycled water match or exceed the quality of the ambient creek water in order to protect wildlife and avoid backsiding on water quality in the creek

Thank you for your consideration of our views.

Regards,



Raymond Hiemstra
Associate Director
Orange County Coastkeeper

Penny Elia



Sierra Club Orange County Conservation Committee

B3-4

B3-5

B3-6

B3-7

February 16, 2017

Dear Mr. Barnes,

This letter is a follow up from myself and my immediate neighbors regarding the draft EIR for the San Juan Watershed Project. We are residents along Via Del Rey near the intersection of Via Del Amo Street in San Juan Capistrano adjacent to San Juan Creek. Our concerns are mainly with dam #2 and the positioning of the associated control station facility adjacent to the residential community along the West side of San Juan Creek. In our opinion it will create both an acoustic and visual nuisance which is of great concern. The following are some comments concerning our objections and possible solutions to the situation.

C1-1

Problems

According to the site plan for dam #2, the control station will be placed directly adjacent to the retaining wall behind our properties. This creates two problems:

- 1) Excessive noise when the control station is in operation. It is our understanding this facility will operate at all hours of the day and night whenever necessary. We would like to point out that when the compressor and associated equipment are operating the projected noise output is approximately 75 decibels. The City of San Juan Capistrano code allows 65db from 7am to 7pm, 55db from 7pm to 10pm and 45db from 10am to 7am in residential areas. Clearly this decibel level is in violation of city code, especially at night.

C1-2

- 2) The structure containing the control station equipment *WILL* also impact scenic vistas. After looking at the plans in the DEIR we see no reason for this structure to be as large as it is. I am personally familiar with the type of equipment involved and there is no reason for this building to have the large footprint as described, especially the height of 12 feet which is almost 1 ½ stories tall!

C1-3

- 3) The proposed DEIR indicates the control stations for dam's 1 and 3 be located on the East side of San Juan Creek adjacent to the industrial park and control station 2 for dam #2 to be located on the West side adjacent to single family residential homes.

C1-4

Possible Solutions

- 1) Move the control station for dam #2 to the East side of the creek in the industrial park. This seems like the easiest solution.

C1-5

- 2) Move the control station for dam #2 to the South about 300 yards to a large open area near an RV storage yard and a tennis court where it would have minimal impact on residents. We will include a picture of the area we are referring to.

C1-6

In talking to the gentlemen present from the Santa Margarita Water Authority at the scoping meeting on Jan 30, 2018, they stated that there were no concerns with the distance of the air-lines between the dam and the control stations. In fact, Mr. Bunts told us at the meeting that they maybe could run all three dams from One control station.

We were able to speak with Mr. Ferons and Mr. Bunts from the Santa Margarita Water District at length after the Scoping Meeting. They both seemed receptive to addressing our concerns and we spoke about all the problems and solutions listed above. Another member of their team, whose name I did not get, asked for my contact information and said he would be in touch with me and come down to look at the purposed new location, but to date I have not heard from him.

So, these are our concerns with this project and we hope you will consider options prior to finalization of the EIR.

Sincerely,

Mike and Susan Thompson

26032 Via Del Rey, San Juan Capistrano 92675

Bill and Linda Lane

32892 Via Del Amo, San Juan Capistrano 92675

Tracy & Ann Lewis

26022 Via Del Rey San Juan Capistrano 92675

Phyllis Tucker

26012 Via Del Rey, San Juan Capistrano 92675

Unavailable for signature - House for sale for 950K

Gerhard and Lynn Jurinek

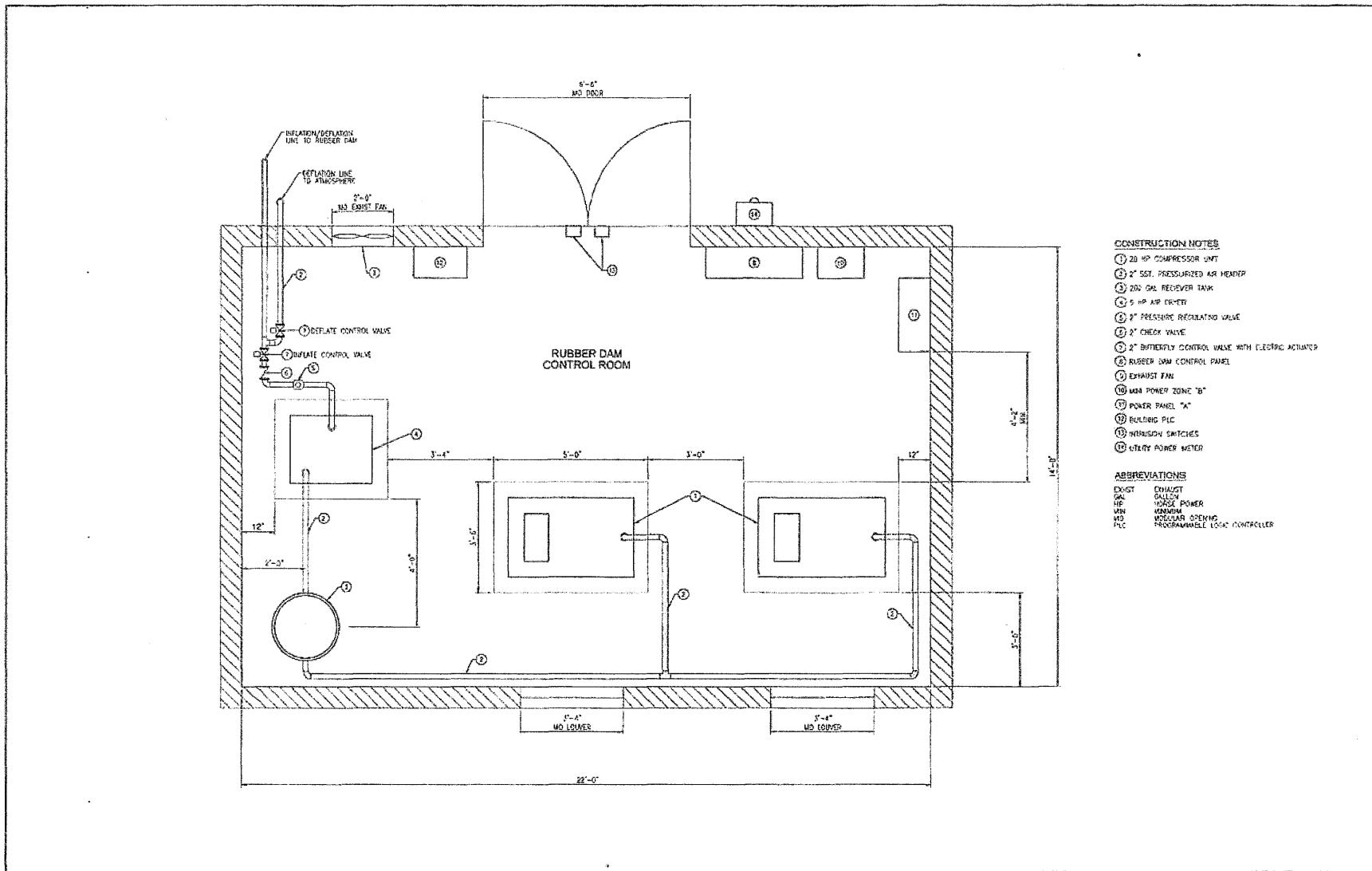
26042 Via Del Rey, San Juan Capistrano 92675

Mark and Paula Torrianni

32882 Via Del Amo, San Juan Capistrano 92675

CCs: Derek Reeves SJC Councilman, Mr. Bunts, Mr. Ferons

C1-7



SOURCE: AECOM

San Juan Watershed Project . 160559

Figure 2-7
Rubber Dam Control Building Design

2021

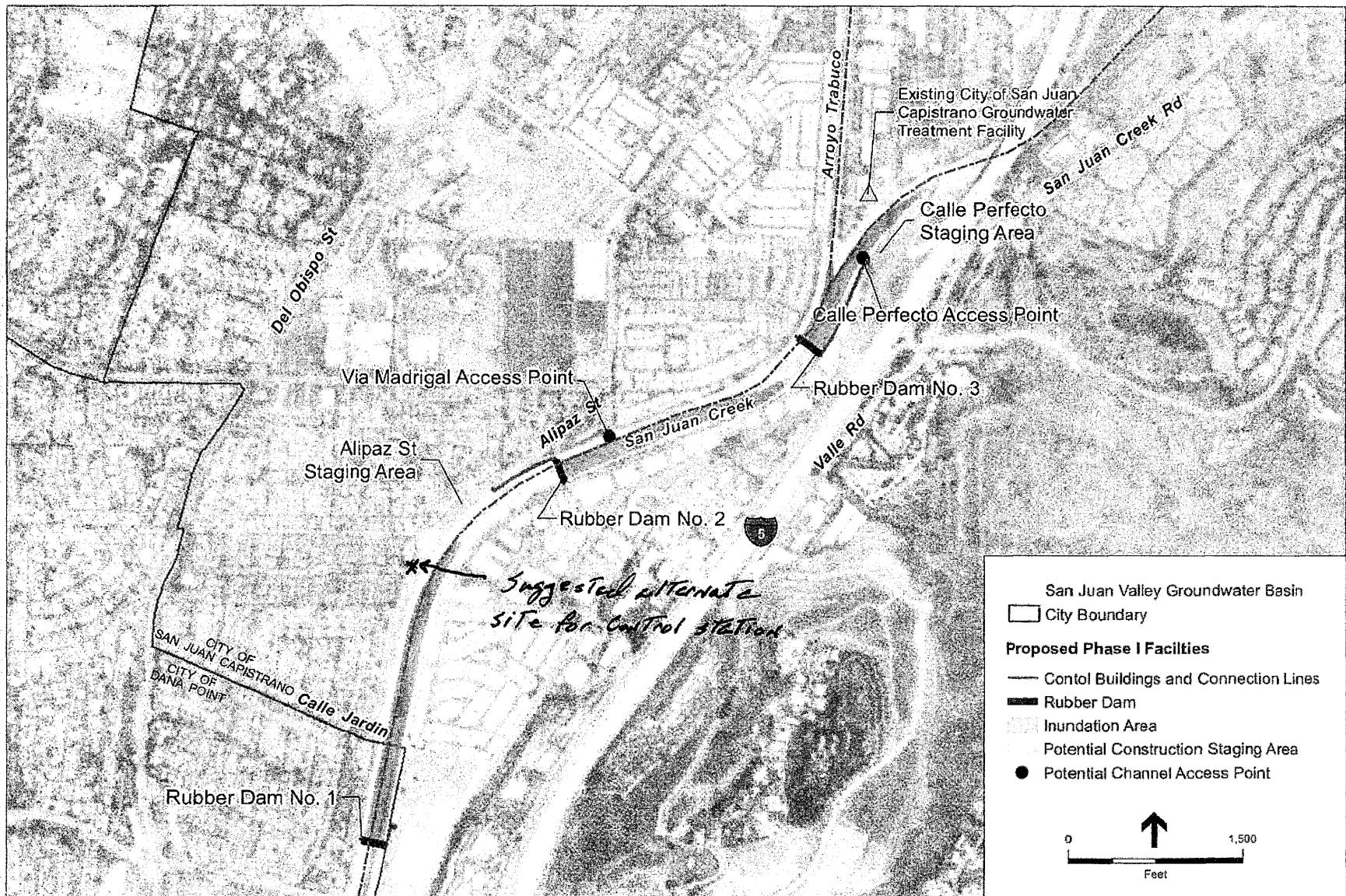
Untitled Map

Write a description for your map.

Legend

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SOURCE: ESRI

San Juan Watershed Project, 160559
Figure 2-2
 Locations of Phase I Facilities

From: Tom Barnes
To: Don Bunts; Marlie Long
Subject: Fwd: Comments on the San Juan Watershed Project
Date: Friday, February 23, 2018 7:39:05 AM

Tom Barnes
323-829-1221 cell

----- Forwarded message -----
From: Richard Gardner <capopalm@hotmail.com>
Date: Feb 22, 2018 11:35 PM
Subject: Comments on the San Juan Watershed Project
To: Tom Barnes <TBarnes@ESASSOC.COM>
Cc:

Hello Tom,

I am making these comments as an individual but I have made similar comments in the public meetings of the San Juan Basin Authority. As a member of Trout Unlimited, I will include comments regarding the Steelhead Restoration plan that was prepared several years ago under a separate letter.

The following items are meant to address physical features and concerns regarding the purpose or intentions of the dams in the creek.

1. The use of rubber dams to capture and hold water in the creek is an option that is premature for reasons that are described in the EIR. The basin is an underground flowing stream. Most of the time the creek is dry and the subterranean flows continue to move toward the ocean. If rain could be captured behind the rubber dam, it would percolate and resurface downstream of the dam. In this way water would move toward the ocean.
C2-1
2. If the first dam (downstream) provided additional groundwater recharge, this water would be downstream of the wells that provide water to the San Juan desalter. This recharge may have a little effect on the seawater infiltration that occurs when the SCWD well is operated during a drought.
C2-2
3. The analysis of the basin and the infiltration flows is insufficient since it doesn't include the pumping by other independent pumpers.
C2-3
4. The San Juan Creek has changed from time to time including large amounts of sediment and at other times far less sand. The invert elevation may change 5 feet resulting in significant differences to the performance of the inflatable dams. If sediment is trapped behind the dams, considerable effort may be required to move sediment to provide accretion to the Capistrano Beach.
C2-4
5. Recent information indicates that the sheet piles installed along the San Juan Creek may significantly reduce recharge to the basin. The existing analysis of the San Juan Watershed Project performance should be expanded to consider the effects of the sheet piles.
C2-5
6. The analysis of the basin and the infiltration flows is insufficient since it doesn't include the pumping by other independent pumpers.
C2-6

Comment Letter C2

6. The EIR does not consider how the rubber dams will attach to the sheet piles. The analysis should evaluate the forces on the piles. The transition of the concrete trapezoidal channel to the dam anchors and back to concrete channel could have significant effects on the fluid dynamics under high flow conditions. Additionally, it is expected that the creek bottom downstream of the dam could be significantly eroded causing damage or undercutting of the 4" concrete channel. Furthermore, if panels of concrete are broken free as they have several times in the past, damage could occur to downstream portions of the creek, bridges, or other dams.

C2-7

7. The EIR mentions that 3 of the 4 San Juan Basin Authority members will be participants in the Watershed project. It does not explain why SMWD would participate in this project since it does not have an interest in the groundwater treatment plants.

C2-8

Similarly, if additional water is provided and is available, why would MNWD not wish to partner in this project? If this project is viable then a rigorous financial analysis should be conducted considering the cost of water for the participants and the cost of water from the various sources so that an equitable sharing of the water and costs can be fully vetted.

C2-9

Thank you for considering these brief comments.

C2-10

Richard Gardner



CHAPTER 11

Master Responses

11.1 San Juan Creek Lagoon

The DEIR assessed impacts to the San Juan Creek Lagoon as part of the San Juan Creek Fish Passage Study Hydrologic Modeling Report, which is included as Appendix D of the Biological Technical Report (Appendix C of the DEIR). As noted on page 1 of the Study, the potential for reduced flow into the San Juan Lagoon was evaluated as a potential impact of the project. The proposed project includes construction of three inflatable dams within San Juan Creek. The most downstream dam is located about 4,200 feet upstream from Stonehill Drive. This is well upstream of the most inland extent of the lagoon at maximum elevation. Therefore, the project's construction footprint would not directly impact any aspect of the mouth of the creek or the lagoon.

The lagoon was characterized by the Chambers Group (2016) as described below:

The size and extent of the lagoon at the mouth of San Juan Creek is dependent upon a number of factors including amount of rainfall and runoff entering the watershed, the size of the beach and sandbar at Doheny State Beach, and discharge or streamflow rates (which can determine when, where, and for how long the sandbar at the mouth of the lagoon breaches). Under typical rainfall conditions, the lagoon breaches and is open to the ocean in winter and spring months and closes off to form more defined lagoon conditions in summer and fall months. It is difficult to determine the upstream extent of the lagoon, particularly during rainy years, as the creek and lagoon merge together during sheet flow fluvial conditions. The area south of the PCH bridge has the highest frequency of inundation (with water typically present between 40 percent and 75 percent of the time). The southwest corner of the lagoon, against the jetty, typically maintains a small pool of water even during the driest years.

The geomorphology of the Lower San Juan Creek and lagoon, as well as of the sandbar at the mouth of the lagoon and the adjacent beach, vary seasonally. Winter storms typically erode the shoreline, forming offshore bars, while during summer months, lower-energy waves cause onshore migration of the bars and shoreline accretion is observed. Beach width varies from year to year and is dependent on size, frequency, and duration of winter storms; size and location of offshore sandbars; and volume of sediment input from the San Juan Creek watershed. While winter beach widths are typically narrower, the analysis of historic aerial photographs completed for this study indicate that the beach and the sandbar at the mouth of San Juan Creek can actually expand during winter

and early spring months during years with higher than average rainfall and fluvial sediment inputs (frequently associated with El Niño events)

The lagoon is a potential reintroduction site for the southern tidewater goby according to the USFWS; however, there are no specific plans for this at this time. Tidewater goby were last collected from the lagoon in 1968 and have not been documented in the lagoon since then (USFWS 2005; Chambers Group, Inc. 2016). The USFWS has concluded that the lagoon no longer provides habitat conditions conducive to supporting gobies because of persistent degraded water quality conditions and the establishment of competitive invasive species (USFWS 2005).

The lagoon is considered a brackish water lagoon for most of the year. During storm flows, the lagoon is transformed from a still, brackish water lagoon to a tidally-influenced estuary connecting the creek and ocean. During large flow events the entire lagoon is essentially freshwater, but as flows decline, ocean waters will begin to influence the lagoon. Salinity in the lagoon is highly variable, and can be increased by waves overtopping the beach when the sandbar is closed.

The proposed inflatable dams would act to impound water within the channel to promote instream infiltration. When flows exceed a specified threshold at each dam, the rubber dams would be deflated to allow all the flow in the river to pass downstream. The dams would only be raised when flows declined to flows less than this identified threshold. When dams are raised, some flows would bypass each dam to allow for up and downstream fish passage. The fishways would be designed in consultation with NMFS to function effectively to support migration. During storm flows, the lagoon would continue to function as it does currently, influenced largely by the size and duration of storm flows. The proposed project would somewhat reduce flows on the front and tail ends of the hydrograph by temporarily impounding flows behind the dams to recharge groundwater underlying the creek. As described in Appendix C of the DEIR and further evaluated in Appendix E of the FEIR, this would result in fewer days of open mouth conditions as it would cause the lagoon to open later and close sooner, resulting in 0.67 days of impact to the migratory window during dry years. During the extensive dry season, the proposed project would have little effect on the lagoon since dry weather surface flows do not exist in the project area. Furthermore, the current condition of the creeks does not support any steelhead migration due to in stream impediments further upstream. The proposed project would provide for fish passage and would provide assistance to in-stream impedance removal as a contribution to convert the existing condition to a viable steelhead migratory channel in the future.

The hydrograph on the San Juan Creek, similar to most urban drainages, has changed dramatically since channelization and urban land uses have been developed throughout the watershed. Impervious surfaces have increased the first flush of every storm into the creek. The County's MS4 permit is designed to reduce this first flush of storm flows to protect the in-stream habitats and water quality. This same perspective can be applied to the effects of the dams on the lagoon. The current hydrograph of San Juan Creek as modeled represents an urban runoff characterized by large initial pulses of stormwater, causing much higher cfs than under natural conditions to reach the lagoon. The proposed project would act like an in-stream storm detention facility similar to Best Management Practices required by the MS4 that promote infiltration and

act to smooth out the wet weather hydrograph and increase groundwater infiltration. The resulting reduction in wetted area in the lagoon may then reflect a more natural condition.

Inflow into the lagoon during dry weather is a combination of groundwater and urban runoff. The creek is without surface flow within and downstream of the proposed dam locations for most of the dry season. Existing storm drains located below the Phase I area would continue to discharge urban runoff into the creek channel and into the lagoon similar to existing conditions. Therefore, the project would not reduce groundwater contributions to the lagoon. Conversely, there is potential that the project would recharge the groundwater basin and augment groundwater inputs into the lagoon compared to existing conditions. The proposed project is expected to capture an average of 700 acre feet annually from Phase I. Most of this recharged water would be captured during and shortly after rain events. The proposed project would not change dry season inflow conditions.

The Fish Passage Study (Appendix D of the Biological Technical Report found in Appendix C of the DEIR) focused on impacts to migration opportunities within San Juan Creek and lagoon. The potential for the project to alter the timing and amount of surface inflow and sediment transport to the lagoon was evaluated in the hydrologic analysis, through application of the Lagoon Quantified Conceptual Model of Inlet Morphology and Associated Lagoon Hydrology (QCM model). The Study concludes on page 11 that the project has the potential to reduce sand berm breaching and the subsequent number of days the lagoon is open to the ocean by up to 22 percent in dry years, resulting in 0.67 days of impact to the migratory window. This percentage is less during moderate and wet years. The DEIR concludes that this reduction of migratory days is less than significant since it is within the annual variability of available migration days. Every year poses different opportunities for migration due to sporadic storm event patterns. The proposed project would result in some effects, but the migratory opportunity would be dictated by the severity of individual storms and the overall storm season. The project's effects would be minor compared to this storm event variability.

In response to comments received on the DEIR, an additional analysis was conducted to estimate the effects of reduced flow into the lagoon on the lagoon size, depth and salinity. The new study was conducted to provide more information regarding the conclusions in the DEIR. Included as Appendix E of the Final EIR, the analysis confirms the conclusions in the DEIR that the project would reduce the average size and depth of the lagoon slightly, but not enough to present a significant effect. **Table 11-1** summarizes the results showing percentage change from existing conditions. The analysis shows that the proposed project would result in the greatest change during dry years where the lagoon size could be reduced by approximately 0.48 acres during the wet season which is 29 percent of the total estimated acreage of the lagoon under these conditions without the project. Although the model predicts a reduction on average in wetted area of the lagoon, this effect would only reflect wet season conditions. The size of the lagoon varies dramatically throughout the year depending on the season and storm events. During the dry season, when the lagoon is smallest the project would not affect the size of the lagoon. During the wet season, the reduced wetted perimeter would not reduce habitat quality since the quality is poor under existing conditions having little to do with the size of the wetted area.

TABLE 11-1
RELATIVE CHANGE FROM EXISTING CONDITIONS

	Existing Conditions				Project Conditions (3 Dams)				Fish Passage Days at Trabuco Cr Mouth
	Avg Depth (feet)	Inundation Area (Acres)	Bottom Water Salinity (psu)	Fish Passage Days at San Juan Cr Mouth	Fish Passage Days at Trabuco Cr Mouth	Avg Depth (feet)	Inundation Area (Acres)	Bottom Water Salinity (psu)	
1995-2015									
Wet Years	0.68	2.50	6.89	16.33	15.56	0.67	2.29	6.80	15.56
Mod. Years	0.60	1.96	7.29	7.00	7.00	0.53	1.57	6.83	6.80
Dry Years	0.50	1.64	6.94	1.33	1.33	0.42	1.16	6.44	1.00

Project Conditions (3 Dams) / Percent of Existing Conditions

	Avg Depth (feet)	Inundation Area (Acres)	Bottom Water Salinity (psu)	Fish Passage Days at San Juan Cr Mouth	Fish Passage Days at Trabuco Cr Mouth
1995-2015					
Wet Years	99	92	99	95	96
Mod. Years	88	80	94	97	97
Dry Years	84	71	93	75	75

Source: ESA 2019; included as Appendix E of FEIR

The current condition of the lagoon does not support sensitive species. As a result, the effect of the project would not be considered a significant impact to habitat or sensitive species.

While implementation of the project would decrease the total annual volume of water reaching the lagoon on average, the effects would be minor and well within the annual variability experienced each year from natural hydrology as discussed above. The project would not substantially deplete the wetted area or significantly impact existing biological resources or habitat suitability criteria important to the tidewater goby.

11.2 Sediment Transport

Installation of the rubber dams would not remove sediment from the creek system. Sediment accumulated behind the dams is expected to be washed downstream during larger storm events. If removal of accumulated sediment behind the dams is needed, it would be placed downstream of the dams to eliminate loss of sediment to the system. The creek would function much as it does now concerning sediment deposition in the lagoon. Sediment is transported according to flow velocity, which varies with each storm event. Since dams would not substantially reduce flow velocity throughout the majority of the watershed, the proposed project would not substantially affect sediment deposited in the lagoon.

In response to comments received on the DEIR, an additional sediment transport assessment was conducted and included in Appendix E of the FEIR. The DEIR described the sand transport mechanism and potential effects of the project. The new technical study was prepared to provide more information regarding the conclusions in the DEIR, and the analysis supported the conclusions of the DEIR, showing that most of the sediment transport in the creek occurs during wet years and that the project could temporarily delay sediment transport as sediment is trapped behind the dams. The greatest project effect would be experienced by the retention of large cobble during dry years behind the dams. However, once the dams are lowered, any accumulated sediment and cobbles would proceed to the ocean. The new sediment transport assessment confirms the conclusions in the DEIR that the proposed project would not reduce sediment transport to the ocean or significantly change the transport mechanism which is largely driven by large storm flows. Since the sand transport mechanism would be similar to existing condition (ie., high flow events), the deposition of the sand at the beach would not be affected by the project. Sand would continue to be deposited on the beach and near shore similar to existing conditions as the energy of high storm flows dissipates at the shore and deposits the sand load.

11.3 Steelhead Recovery

Section 3.3 (*Biological Resources*) of the Draft EIR evaluates the potential for the project to affect Special-Status Aquatic Species including arroyo chub, tidewater goby, and steelhead. As discussed in Section 3.3, there is high potential for steelhead and arroyo chub to occur in the portions of San Juan Creek within the Phase 1 area, while the potential for tidewater goby to occur is low. Recent surveys in the upstream of the project site did not document juvenile steelhead presence anywhere in the San Juan Creek/Trabuco Watershed. At least one adult steelhead did enter lower San Juan Creek in 2006 (12 years ago), but it became stranded in low

flows and was captured and returned to the ocean. Arroyo chub have been recently documented within the project area when there is flow in San Juan Creek.

Existing habitat in the project area in San Juan and Trabuco Creek does not provide suitable spawning, incubation or rearing habitat for steelhead. The project area lacks suitable spawning substrate, cover, and holding pools present. Streamflow under existing conditions is highly variable with large and brief flow events during the wet season comingled with extensive periods of no surface water whatsoever. Surface flow conditions within and downstream of the project area under existing conditions are insufficient to support steelhead spawning, incubation or rearing. Migration would only be possible during storm-generated surface flows, but migration windows are very confined under the existing hydrologic regime.

Arroyo chubs are habitat generalists and can make use of the habitat in and downstream of the project area. However, existing flows are not persistent and there are extensive periods of time during the dry season when there is no surface water in the channel. Any fish that attempt to establish themselves in the creek would be subject to stranding and desiccation between storm flows.

11.4 Dam Construction

Construction of the rubber dams would occur from April to October, with most of the in-channel work occurring outside of the steelhead migration window (January through June). It is possible storms in the late season (April through May) could generate flows within the migration window. The portion of San Juan Creek where construction would occur usually only flows for a few days following a rainfall event. Thus, performing construction activities mostly outside of the migration season would minimize the potential for direct impacts to steelhead. As discussed in Section 3.3 (*Biological Resources*) the Draft EIR, there is a potential that adults could become trapped construction areas within the channel during April and May. Injury or death of steelhead individuals would be considered a significant impact. However, Mitigation Measure BIO-1 would be implemented to avoid significant impacts through seasonal avoidance for in-channel work to the extent feasible as well as implementation of a fish rescue plan. The fish rescue plan applied during construction would define when fish rescue would be necessary; access to each construction site; approved rescue methods, such as seining, electro-fishing; how the rescued fish should be handled, held and transported to minimize stress and avoid predation; and identify pre-approved release locations by species and size. The fish rescue plan would be developed and submitted to the California Department of Fish and Wildlife (CDFW) and the National Marine Fisheries Service (NMFS) no less than 45 days prior to commencement of construction and approved within 30 days of start of construction. Consultation with NMFS for the project would be required under Section 7 of the federal Endangered Species Act. The project would require a Biological Opinion from NMFS that will provide authorizations to handle listed steelhead.

Currently, the proposed rubber dams would be designed to include a fish passage structure (i.e., a fish way, or ladder). The fish way would be located along one side of the rubber dam and, as currently designed, would be approximately 165 feet in length and 9 feet in height. The 165-foot fish way would include 10-foot concrete approach aprons on both the upstream and downstream

ends of the structure. The fish ways would have a channel width of 6 feet and a maximum floor slope of 10H:1V. The District would work closely with the regulatory agencies and non-governmental organizations (NGOs) to guarantee that operation of the rubber dams and fish ways provide opportunities for adult steelhead to migrate upstream (and back downstream), and for smolts to move downstream to the ocean. Mitigation Measure BIO-1 would require development of a fish rescue plan for project operation that would define under what conditions that stranded fish would need to be rescued, the methods used for the rescue, and the process used to move fish to pre-approved release sites.

11.5 Fish Passage Model

The San Juan Creek Fish Passage Study, Hydrologic Modeling Report, included as Appendix D of the Biological Technical Report was prepared to evaluate potential impacts from modification of the creek hydrology. The study compares modeled flow events based on historic hydrology with and without the proposed project. Stream gage data over a 45-year period was used and a modified flow regime “with-project” was applied to model the effects of the rubber dam operations on streamflow. Channel cross sections developed for the most recent Orange County Department of Public Works (OCDPW) HEC-RAS model were used to estimate channel velocity and depth of flow for 100-foot segments of the creek. These sections spanned from the ocean to the upper most extent of the most upstream impoundment. The Fish Passage Study model applied depth of flow and velocity habitat suitability criteria to each segment of the creek. When the project operations were applied to the river hydrology, the model predicted an 8 percent reduction in average annual suitable migration days. This represent a decrease of 0.6 passage days per year. The DEIR concludes that this effect was less than significant since it was within the annual variability of annual passage days.

The Fish Passage Study was updated to include affects to fish passage and lagoon conditions during wet, medium, and dry years. The updated study was prepared to provide more information regarding the impact identified in the DEIR. The results of the assessment included in Appendix E of the FEIR confirmed the conclusions in the DEIR, showing that the annual variability of instream hydrology has a far greater impact on fish passage days than the imposition of the rubber dams.

11.6 Habitat Criteria Depth

The habitat suitability criteria were kept consistent with the criteria used in the 2015 HDR Report (Trabuco Creek Barrier Assessment, prepared by Jon Mann and Jake Hyles for the National Marine Fisheries Service, April, 2015), as noted on page 22 of the Fish Passage Study, Appendix D of the Biological Technical Report. The 0.5-foot minimum depth-of-flow criteria was used because the criteria: 1) are consistent the aforementioned 2015 HDR report, 2) recognize the somewhat smaller average size of adult Southern California Coast Steelhead, and 3) result in more conservative modeling results. In other words, there are more days that don't meet the criteria for passage using the 0.5-foot depth criteria than when using the 0.8-foot minimum criteria. Hence, the modeled results describe a larger potential impact from the project with the than if the 0.8-foot criteria were used.

11.7 Climate Change

Climate change will potentially have serious impacts on plants and animals across the planet, most notably so at the extreme limits of their range. San Juan Creek is near the southern limit of the range for steelhead. Therefore, changes to flow and/or temperatures regimes in the creek would be expected to have potentially serious effects on what is already marginal habitat within the San Juan Creek watershed. Climate change impacts are projected through the use of probabilistic models by applying different assumptions to the projected shift in climate (i.e. wetter-cooler, wetter-warmer, drier-cooler or drier-warmer). A more episodic weather pattern may also be applied to these model assumptions to account for larger rainfall events or more persistent droughts. Impacts to creek hydrology from climate change are difficult to calculate. Estimates of climate change on creek hydrology indicate that longer droughts and more intense storms are possible.

In response to questions regarding future hydrology, an assessment of impacts to creek hydrology during future wet years and dry years was conducted to describe the possible range of future conditions. The assessment included in Appendix E of the FEIR finds that impacts to fish passage and lagoon conditions would be minor during wet, medium, or dry years, and that annual variability of the hydrology has considerably greater effects on in-stream conditions than the introduction of the rubber dams.

11.8 Stranded Fish

Under existing conditions, fish become stranded throughout the project as well as upstream and downstream. Following flow events, the San Juan Creek channel dries up. Any fish still in the channel become isolated in small pockets, either becoming prey items for predators or suffocating. Although fish in the channel can move upstream to perennial flows, upstream passage in Trabuco Creek is not possible due to three manmade physical barriers: Structure 3 in the flood control channel, the Metrolink Crossing and at the I-5 Crossing (HDR 2015). Although fish can move downstream to the lagoon, this habitat is only suitable for species that can handle some level of salinity.

Fish stranding is a function of the flashy nature of the flows and the rapid loss of surface flow to groundwater in San Juan Creek. The project will provide stranding refugia in the impoundments behind the dams until the impoundments dewater through percolation. Potential groundwater recharge from the impounded water may also sustain flows slightly longer in channel segments downstream of the dams. Thus, the project will not change the stranding risk that already persists in the San Juan Creek channel within and downstream of the project area, but it may delay some of the stranding from water impounded behind the dams and downstream channels retaining water longer after storm events. Mitigation Measure BIO-1 has been modified to include fish rescue procedures during dam operations.

11.9 Passage Delays

The bypassing of dams via fish ways typically takes fish longer than swimming up an unimpeded channel reach. These delays typically occur from difficulty finding the fish way entrance,

negotiating passage within the fish way, and exiting the fish way into the upstream impoundment. Almost all of the studies done to document upstream delays have been done on very large river systems with very large dams, such as the Columbia River. Delays can result in more energy stores consumed during the upstream period of their migration and, in turn, make fish less fit to successfully spawn. Downstream migration could similarly be delayed as fish search for the downstream passage route using a fish way at the dam face. This delay can be minimized by deflating a notch in the dam crest and providing a site where flow convergence will attract the fish into moving downstream.

In the context of this project, the three dams could cumulatively delay upstream and downstream passage, but the extent of delays are unknown. Since these dams would be small (9-foot maximum) and would be lowered once flows exceed the hydraulic design capacity (a flow of less than 1,000 cfs), delays are expected to be minimal. Fish ways will be designed with auxiliary water supplies (including a pipe from the upstream impoundment to the base of the fish way) to provide up to 100 cfs of attraction flow, which equates to about 10 percent of the total flow at which time the dam will be lowered. Additionally, the rubber dams will be designed with a section that can be partially deflated to facilitate fish passage downstream while the dam is up.

As physical structures in the channel, the dams may somewhat delay upstream and downstream migration rates compared to the existing channel conditions. However, the impoundments of water behind the dams will be deeper and slower in velocity compared to the existing channel conditions. Deeper and slower flows may improve migration rates through the channel length.

Additionally, during large flow events when the dam is deflated, debris could build up on the fish way exit (or upstream end) and result in entrapment and stranding of individuals. However, the project would install vertical shafts in the channel upstream of the fish way exits to capture debris and keep the exits open and functional. The fish way exits would be designed and oriented to minimize debris loading. As discussed in Section 2.7.2 of the Draft EIR, accumulated sediment and debris at the dams would be removed as-needed.

11.10 Invasive Species

Invasive animal or plant species present in the upper watershed could temporarily occupy the flow impoundments behind the dams during their inflation. However, the dams would not provide perennial habitat for invasive species and would thus inhibit their ability to successfully reproduce and establish populations. The function of the dams is to provide hydraulic head within the impoundment to percolate groundwater by gravity during flows of the appropriate size. Consequently, impounded water behind the dams would be a short-lived phenomenon (weeks to months), and the persistence of these impoundments would be directly related to flow conditions in the creek at the time. Since impounded water would percolate within months during the wet season, no invasive plants or aquatic species would be sustained in the channels through the dry summer season. Any vegetation that did manage to establish itself in the dam inundation areas would be controlled with ongoing maintenance practices. These vegetation clearing activities would be permitted by the wildlife agencies.



CHAPTER 12

Responses to Comments

The comment letters received during the public review period for the Draft Program EIR (DEIR) are included in Chapter 10. In this Chapter 11, the Santa Margarita Water District (SMWD) provides individual responses to the bracketed comments in each letter. In some instances, in response to the comment, SMWD has made additions or deletions to the text of DEIR; additions are included as underlined text and deletions as ~~stricken text~~.

Letter No	Comment No	Comment	Response
Comments Received From Agencies/Tribal Governments during the Draft EIR Comment Period			
Letter A1: California Office of Planning and Research			
A1	1	<p>The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on February 23 ,2018, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.</p>	<p>This comment letter demonstrates that the Public DEIR has been filed with the California Office of Planning and Research in accordance with the CEQA Guidelines. This comment does not address the adequacy or accuracy of the DEIR. No further response is required.</p>
Letter A2: National Marine Fisheries Service			
A2	1	<p>Enclosed with this letter are the National Marine Fisheries Service's (NMFS) comments on the Draft Program Environmental Impact Report (Draft PEIR) for the San Juan Watershed Project (Project). In accordance with California Environmental Quality Act regulations (14 CCR § 15151), the enclosed comments highlight where the Draft PEIR is inadequate for disclosing the Project effects on endangered steelhead (<i>Oncorhynchus mykiss</i>) and habitat for this species.</p> <p>On February 8, 2018, NMFS attended a meeting with the Santa Margarita Water District (District) to receive an update on the Project status. During this meeting, NMFS suggested that neither the rubber-dam design nor operation should reduce migration opportunities for steelhead. In addition, NMFS suggested that the entirety of the District's proposed Project, including the construction, operation, and maintenance of all 12 rubber dams, and other interrelated and interdependent activities, should be provided to NMFS for the purpose of supporting the future Section 7 formal consultation under the Endangered Species Act (ESA). Segmenting the broader action into smaller parts, and then initiating consultation on a segmented part, would be inconsistent with Section 7 of the ESA and its implementing regulations.</p> <p>NMFS appreciates the opportunity to review and comment on the Draft PEIR. Please contact Brittany Struck at (562) 432-3905 or via email at Brittany.Struck@noaa.gov if you have a question concerning this letter or enclosed comments.</p>	<p>This comment does not address the adequacy or accuracy of the DEIR. No further response is required. The comment regarding bundling the future phase of the project during the permitting stage is noted. The DEIR assesses three dams at a project level and identifies future phases could be implemented to augment recycled water recharge. However, without the details of future recycled water components, the designs are speculative and insufficient for permitting purposes. The District looks forward to consulting with NMFS regarding appropriate permit processes.</p>

Letter No	Comment No	Comment	Response
A2	2	Overall, the content of the Draft PEIR does not allow NMFS to develop a clear understanding of the manner in which the Project may affect endangered steelhead and available habitat for this species, the amount, extent and duration of adverse impacts, and the implications of these impacts for survival and recovery of steelhead in the San Juan Creek watershed. The Draft PEIR does not meet the California Environmental Quality Act (CEQA) criterion for adequacy and full disclosure in the context of significant, environmental issues.	Contrary to the comment, the DEIR does meet the criterion for adequacy and disclosure to meet CEQA as determined by SMWD as lead agency. The DEIR identifies existing and future resources within the creek including habitat values for the steelhead. The DEIR identifies potential impacts and commits the lead agency to mitigation measure that will ensure the project minimizes adverse effects sufficiently to result in a less than significant impact to steelhead. The DEIR acknowledges that NFMS is a Responsible Agency and that concurrence with impacts identification and mitigation implementation will be necessary to complete consultation. SMWD looks forward to working with NMFS to develop a project that simultaneously improves viability of the San Juan Creek for steelhead recovery as well as promotes local water supplies that reduce the region's reliance on imported water. See Master Response: Steelhead Recovery.
A2	3	The District should revise the Draft PEIR to disclose that operation of rubber dams is likely to strand steelhead. If stranding is unavoidable, then the Draft PEIR should be revised to include measures to minimize the likelihood of stranding and related potential consequences.	<p>The DEIR identifies potential impacts to fish from stranding upstream of the dams during construction. Mitigation Measure BIO-1 requires that SMWD prepare a Fish Rescue and Relocation Plan that would ensure any fish stranded during construction activities be collected and relocated. Operation of the project would impound water behind dams, but would not impede migration of fish upstream. Nonetheless, in response to this comment, Mitigation Measure BIO-1 has been modified as shown below to ensure that the Fish Rescue and Relocation Plan include long term operation of the dams.</p> <p>BIO-1 In-channel construction and maintenance activities will be timed to avoid encountering special-status aquatic species to the maximum extent feasible. San Juan Creek and Arroyo Trabuco are typically without surface flows from late April or May through the summer and into the fall or early winter. Therefore, in-channel construction and maintenance activities will be conducted between June 1 and October 31 when surface flows are unlikely to occur and special-status fish species would not be present.</p> <p>A Fish Rescue and Relocation Plan will be developed prior to commencement of Phase I construction to address scenarios where in-channel construction or maintenance activities must occur between November 1 and May 31, when construction/maintenance sites become inundated outside the rainy season, or when native fish become stranded during operation of the rubber dams. The Fish Rescue and Relocation Plan will define when fish rescue</p>

Letter No	Comment No	Comment	Response
			<p>may be necessary; access to each construction site; approved rescue methods, such as seining or netting; how the rescued fish are held and transported to minimize stress and avoid predation; and identify release locations by size and species. <u>The Plan will also include operations of the dam for the life of the project, including monitoring of ponded water and relocation of any stranded fish prior to cessation of upstream inflows.</u> The Plan will be consistent with CDFW- and NMFS-approved fish relocation guidelines and will be approved by these agencies prior to its implementation.</p> <p>See Master Response: Steelhead Recovery.</p>
A2	4	Further, mitigation measure BIO-5 should include detailed performance objectives and details on commitment level and type of participation/assistance (e.g., time, expertise, finances) in planning, design, and implementing steelhead passage-improvement projects in the San Juan Creek watershed.	<p>The existing condition for steelhead migration in San Juan Creek is currently limited and hindered by existing barriers in the river channel, such that there is no viable anadromous steelhead population within the watershed. Much work is needed on San Juan Creek and Arroyo Trabuco in the future to return steelhead to upstream spawning and rearing habitats. The DEIR concludes that impacts to fish passage would be less than significant to the baseline condition. However, to minimize impacts in the future and to assist with permitting requirements the DEIR includes Mitigation Measure BIO-5 that commits SMWD to contributing meaningfully to the restoration of the steelhead fishery in the creek. Implementation of BIO-5 would reduce already less than significant impacts by requiring coordinated efforts with the OCPW and NMFS to implement channel improvements that would expand fish passage opportunities by participating in upstream impediment removal projects as well as implementing channel improvements in the lower San Juan Creek channel downstream of the lowest dam and in the channel segments between the dams. As noted in the comment, the details of these improvements have not been fully developed, and will require partnership with multiple stakeholders including the USACE, USFWS, OCDPW, and NMFS. Mitigation Measure BIO-5 commits SMWD to contributing to these channel improvements in coordination with these stakeholders and responsible Agencies to assist in the steelhead recovery efforts. SMWD could act as a facility management agency responsible for maintaining fish passage infrastructure and could participate financially. This would facilitate future improvements by reducing OCDPW's responsibilities and commitments. The DEIR acknowledges that consultation with NMFS is a requirement of the project and that the dams will not be built without concurrence from</p>

Letter No	Comment No	Comment	Response
			NMFS and other Responsible Agencies on the details of SMWD's contribution to recovery of steelhead in San Juan Creek and Arroyo Trabuco.
A2	5	Also, the Draft PEIR should include an explanation regarding the degree of funding and/or planning assistance necessary to meet the threshold of "commensurate with SMWD's level of effect..." (ES-7). The Draft PEIR should be revised to include a description of how the District's level of effect would be measured and evaluated.	Implementation of the project will require partnership with multiple stakeholders including the USACE, USFWS, OCDPW, and NMFS. Mitigation Measure BIO-5 commits SMWD to contributing to these channel improvements in coordination with these stakeholders and responsible Agencies to assist in the steelhead recovery efforts. The District could act as a facility management agency responsible for maintaining fish passage infrastructure and could participate financially in developing and constructing fish passage infrastructure. This would facilitate future improvements by reducing OCDPW's responsibilities and commitments. The amount of funding and participation would be determined through cooperative agreements of interested parties and ultimately would be approved by NMFS. The commitment to participate in a meaningful way presents a benefit that would not occur otherwise without the project. The DEIR acknowledges that consultation with NMFS is a requirement of the project and that the dams will not be built without concurrence from NMFS and other Responsible Agencies on the details of SMWD's contribution to recovery of steelhead in San Juan Creek and Arroyo Trabuco. All funding and planning will depend on the extent of what in-creek habitat improvements need to be altered or improved.
A2	6	The Draft PEIR's description of impacts to surface water (e.g., magnitude, extent, duration of habitat connectivity throughout the Project site) is inadequate to develop a clear understanding of the effects. For example, under the minimum scenario as described in Table 3.8-4 (page 3.8-22), the Draft PEIR should be revised to include a discussion regarding the effects on surface water given an anticipated reduction from 29 to 0 (AFY) in groundwater outflow to the ocean owing to the proposed Project. The final EIR should incorporate tables, figures, and additional content that not only describe impacts but also includes a discussion on physical and biological consequences of the impacts to endangered steelhead and available habitat (i.e., surface water).	Appendix D of the Biological Technical Report provides tables and figures to describe the impact analysis conducted on steelhead migration opportunities. See Master Response: Steelhead Recovery.
A2	7	The disclosure of effects to endangered steelhead from the proposed Adaptive Pumping Management Plan is currently lacking. In this regard, the final EIR should include the following elements: (1) a framework and process for evaluating and meaningfully describing how operations are expected to influence the magnitude, extent, and quality of available surface water and other habitat elements throughout the duration of the	The APM is not affected by the proposed project. The APM would continue to function as a monitoring program to ensure that riparian habitat is not affected by groundwater pumping. The proposed project would increase groundwater levels. Currently, the riparian vegetation and habitat will benefit from this proposed project. The APM includes a monitoring program to evaluate basin responses to pumping and

Letter No	Comment No	Comment	Response
		Project, (2) a monitoring schedule for parameters such as surface-water depths, (3) water-quality criteria protective of endangered steelhead, and (4) a response plan when actual (future) habitat conditions do not align with expected conditions as characterized by the Draft PEIR (i.e., deviations from predicted or anticipated habitat quality or quantity conditions).	climate conditions such that the pumping allocation can be adjusted, based on water levels and water quality conditions. Appendix D of the Biological Technical Report provides tables and figures to describe the impact analysis conducted on steelhead migration opportunities. See Master Response: Steelhead Recovery.
A2	8	The Draft PEIR (Appendix C, page 49) describes the expected development of ponding or pools on the upstream side of the rubber dams. These ponded areas are likely to attract invasive species and predators that can impact rearing steelhead. Despite the vaguely described duration of ponded areas to be "months" (Appendix C, page 51), these extended instream conditions may support invasive species on a continual basis. The final EIR should include a discussion about invasive species infiltrating the ponded areas and the potential impacts of these species on endangered steelhead.	The proposed project would not be expected to increase the presence of Invasive species substantially. Ponded water would not be perennial but would percolate to groundwater, so aquatic fish and amphibians would not establish in the impoundments. See Master Response: Steelhead Recovery and Invasive Species.
A2	9	Because the Draft PEIR explains, "The proposed Phase 1 rubber dams would impede and dissipate flows within San Juan Creek (page 3.8-26)," and given the Draft PEIR lacks a meaningful objective to ensure safe passage for endangered steelhead, the final EIR should disclose impacts and related consequences to the migratory behavior and ecology of endangered steelhead. We emphasize that disclosure in the current Draft PEIR is often confined to discussion of the impacts, with no consideration of the related consequences due to the impacts. This renders the Draft PEIR inadequate because the impacts are not an end in and of themselves; rather, the impacts are likely to generate additional effects and related consequences to endangered steelhead and habitat for this species, which are not disclosed. Therefore, the final EIR should include a discussion of the effects and ultimate consequences due to each impact.	In compliance with CEQA, the DEIR identifies existing and future resources within the creek including habitat values for the steelhead. The DEIR identifies potential impacts and commits the lead agency to mitigation measure that will ensure the project minimizes adverse effects sufficiently to result in a less than significant impact to steelhead. The DEIR acknowledges that NMFS is a Responsible Agency and that concurrence with impacts identification and mitigation implementation will be necessary to complete consultation. SMWD looks forward to working with NMFS to develop a project that simultaneously improves viability of the San Juan Creek for steelhead recovery as well as promotes local water supplies that reduce the region's reliance on imported water. Furthermore, CEQA requires that an EIR evaluate impacts to the existing condition at the time of the NOP. With respect to steelhead, there is currently no steelhead population or viable steelhead habitat within the project area that the project would effect. All of the comments provided by NMFS reflect impacts to a vision of recovery for the species that is speculative and reliant on a myriad of impediments and stakeholder commitments. SMWD respects the efforts to implement the recovery plan successfully, but asserts that the DEIR complies with CEQA impact analysis requirements. See Master Response: Steelhead Recovery.

Letter No	Comment No	Comment	Response
A2	10	The Draft PEIR should disclose effects of the rubber dams and their operation on migration opportunities for steelhead. In this regard, the final EIR should describe: (1) the expected alterations to river hydraulics (e.g., depth, velocity, turbulence) from each dam when deflated and when inflated, over a range of flows, including hydraulic conditions across the footprint of each dam and throughout the area ponded by each dam (see NMFS' January 17, 2017, and October 6, 2017, letters), (2) hydraulics of proposed fish ways over a range of flows, and (3) the anticipated effects of these on migration and movement of endangered steelhead.	Appendix D of the Biological Technical Report provides a detailed modeling of pre and post project passage conditions based on previously established minimum depth of flow and maximum velocities in the modeled channel reaches. These impacts are evaluated and summarized to predict potential effects to fish passage. Dams would be deflated when 1) impounded water has percolated or 2) when flow at the dam site exceeds approximately 1,000 cfs. There would be a short-term increase in flow as the volume of water stored behind the dam is evacuated downstream, but this would occur during an existing high flow event, dams can be lowered slowly to minimize this effect. The fish ladder would be operational throughout this process. Dams would be raised when flows at a dam site were below 1,000 cfs. During raising, the fishway would be operating allowing fish to move up or downstream of the structure. The dam would be raised slowly so as not to strand fish in the channel downstream. The objective of the fish passage study was to evaluate the various hydrologic conditions identified in the comment including a highly variable range of flows that occurs over the 45 year period of record. The study concludes that the proposed project would reduce migratory opportunities by up to 8 percent compared to existing conditions. See Master Response: Steelhead Recovery.
A2	11	The existing description of cumulative effects in regard to endangered steelhead and habitat is inadequate because the description does not provide a sufficiently clear understanding of the amount, extent, location, duration and type of cumulative effects that are expected. The final EIR should include the following: (1) Project impacts to the lagoon itself such as area, shape, vegetation, and depth based on an evaluation of cumulative effects to the lagoon given the proposed Doheny Ocean Desalination project may result in impacts to lagoon water-surface elevation, and (2) duration of delay during steelhead migration while the species attempts to maneuver past each rubber dam based on an evaluation of cumulative effects to the species given that Orange County Public Works maintains existing drop structures and is proposing additional structures within the same footprint of the Project.	The lagoon habitat of San Juan Creek would not support over-summer rearing of salmonids based on water temperature and other water quality factors (Chambers Group 2016). The project would not significantly affect the habitat values of the lagoon since the project would not substantially affect sediment transport into the lagoon or dry weather flow contributions from the creek into the lagoon. See Master Response: San Juan Creek Lagoon. The DEIR concludes that the project would not contribute considerably to the effects of the Doheny Ocean Desalination project on the lagoon. See Master Response San Juan Creek Lagoon.

Letter No	Comment No	Comment	Response
A2	12	The Draft PEIR is inadequate because it lacks information to allow an understanding of how the rubber dams would impact endangered steelhead and habitat for this species. Therefore, the final EIR should include: • Effects of operating and maintaining rubber dams on steelhead passage (Appendix D, page 1) and migratory behavior (e.g., time and energy required for juvenile and adult steelhead to approach, navigate, and pass all proposed dams). This discussion needs to explain: (1) how the fishway design, configuration, and operation incorporate passage requirements for juvenile and adult steelhead given migration seasons of two different life stages, (2) possible passage problems such as excessive water velocities or turbulence, excessive drop heights, lack of water depth, and debris accumulation, and (3) how the Project alters both winter and spring discharge through the Project area in general and through each dam and fishway in particular.	As noted in responses to comments A2-1 through A2-11, the DEIR clearly identifies existing and future steelhead habitat values in San Juan Creek and outlines potential impacts to migratory habitat. The DEIR complies with CEQA requirement to identify impacts, evaluate significance, and implement mitigation strategies available to minimize potentially significant effects. The detailed designs of the fishways and dam operations would be finalized in coordination and with final approval from NMFS through the required consultation through the USACE. The DEIR adequately characterizes the potential effects and mitigation measures needed to result in less than significant impacts. See Master Response: Steelhead Recovery.
A2	13	A description of the “certain storm event” that would trigger full deflation of the dams in addition to any other scenario or criterion that would trigger deflation (i.e., an operation and maintenance schedule).	The dam would be deflated during high storm flow events generally over 1,000 cfs. The exact flow rate that triggers deflation has not yet been identified, but would correspond to flows resulting in significant overtopping of the facilities. The fish passage analysis does not make a distinction between the dams being inflated or deflated, and in this sense provides a conservative assessment of impacts to fish passage. The fishways would be designed in consultation with NMFS to function effectively to support migration.
A2	14	A protocol that will track performance of mitigation measures, respond to new information or changing conditions, and detect and reconcile deficiencies or problems in a timely manner.	The DEIR identifies impacts to steelhead migration from implementation of the rubber dams. The analysis concludes that migratory opportunities would be reduced by 8 percent. The proposed project does not include any measures to track or manage steelhead migration which is beyond the scope of the project.
A2	15	A procedure for measuring and detecting spatial and temporal changes in habitat quality and quantity as a result of operating and maintaining rubber dams.	The DEIR identifies impacts to steelhead migration from implementation of the rubber dams. The analysis concludes that migratory opportunities would be reduced by 8 percent. The proposed project does not include any measures to track or manage steelhead migration since the existing habitat does not support steelhead migration.

Letter No	Comment No	Comment	Response
Letter A3: United States Fish and Wildlife Service			
A3	1	<p>The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Impact Report (Draft PEIR) for the proposed San Juan Watershed Project in southern Orange County, California. The Santa Margarita Water District and the South Coast Water District (collectively, project proponents) propose to develop facilities to manage surface water resources and to enhance groundwater resources of the San Juan Basin. The project will be constructed in multiple phases. Phase 1 of the project includes the installation of three rubber dams in a channelized section of San Juan Creek, downstream from the Interstate 5 Bridge, and upgrades to the City of San Juan Capistrano (CSJC) Groundwater Recovery Plant (GWRP) to improve the efficiency of existing water treatment processes. Subsequent phases may include the installation of additional rubber dams in San Juan and Arroyo Trabucco Creeks, recycled water pipelines, groundwater extraction wells, additional upgrades to the CSJC GWRP and upgrades to the South Coast Water District GWRP. Phase 1 of the project is assessed at the project level in the Draft PEIR. Subsequent phases are assessed at a programmatic level because they are largely conceptual. The primary concern and mandate of the Service is the protection of public fish and wildlife resources and their habitats. The Service has legal responsibility for the welfare of migratory birds, anadromous fish, and endangered animals and plants occurring in the United States. Specifically, the Service administers the Endangered Species Act (Act) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and provides support to other Federal agencies in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.).</p>	<p>The comment provides a summary of the project description and does not address the adequacy or accuracy of the DEIR. No further response is required.</p>
A3	2	<p>The San Juan Creek Watershed is ecologically significant because it is one of the only remaining large watersheds in southern California that is not substantially impeded by dams and thus retains the natural flows and associated processes necessary to support native aquatic resources along the majority of its length. A natural lagoon still forms at the river mouth and is identified as a potential reintroduction site for the federally endangered tidewater goby (<i>Eucyclogobius newberryi</i>) within its historic range in southern California (Service 2005). Southern tidewater goby have recently been identified as a separate species (Swift et al. 2016) that is currently known to occupy only five lagoons, all on Camp Pendleton (Marine Taxonomic Services 2017). As discussed in the Draft PEIR, San Juan Creek is also considered by the National Marine Fisheries Service (NMFS) as integral to recovery of southern California steelhead (<i>Oncorhynchus mykiss</i>; steelhead). Efforts have been underway by local stakeholders for</p>	<p>The comment provides a summary of the project description and does not address the adequacy or accuracy of the DEIR. No further response is required.</p>

Letter No	Comment No	Comment	Response
A3	7	<p>Second, the analysis in the Draft PEIR assumes flows through the project area are "flashy" (i.e., rapid increase and decrease in streamflow with rainstorms). Application of a flashy profile to the model decreases the number of days when conditions are considered suitable for passage of steelhead relative to a natural hydrograph because it reduces the number of breaching events. It also increases the amount of flow "lost" to the ocean and decreases the extent of natural recharge within the system. Discharges from Trabuco Creek may be flashy because the watershed area is largely developed; however, significant changes in hydrology within San Juan Creek are not expected due to implementation of WQMPs and the SAMP.</p>	<p>The hydrology model was calibrated to existing flow conditions in the creek. The DEIR didn't assume this condition, it is demonstrated in the flow record. The stream may not have always been that flashy, but it certainly is under current conditions. The model used average daily flows which makes the flows appear <u>less</u> flashy than they really are, not more. This means that the highest peaks in a 24-hour period are smoothed out, as are the lowest lows. The lagoon mouth opening and closing model isn't very sensitive to daily versus hourly timesteps (lagoon breaches are mostly driven by the accumulated <u>volume</u> of water entering the lagoon rather than the <u>rate</u> at which water enters). The fish passage model is more sensitive to timestep than the lagoon mouth model, but the times when hourly flow is higher than 24-hour average flow (therefore fish passage over shallow sections is easier than modeled) will tend to cancel out the times when hourly flow is less than the 24-hour average flow.</p>
A3	8	<p>Finally, passage days for steelhead are based on applying flows over a fixed bed; whereas the actual channel has a soft bottom. We expect channel topography will change seasonally and annually in response to the number and magnitude of precipitation events. Therefore, it is important to understand when the topographic data was collected, relative to the expected timing of steelhead migration and how the channel topography changes over time. Thus, projected changes to the hydrograph resulting from the project, relative to the baseline condition are based on specific model assumptions that may not be appropriate for the system. Because the Draft PEIR depends on the results of models to predict impacts to biological resources, we believe impacts to biological resources may be greatly underestimated.</p>	<p>The comment is correct that the channel bed as modeled represents a snapshot of time, and that it will change over time. However, the cross sections used were reflective of the most recent channel morphology survey. We reviewed aerial photos to see how much the channel bed changes over time (for example, does it go through periods of having a better or less well defined low flow channel that would affect fish passage). From visual inspection, while the specific location of riffles and braided sections changes over time, the general channel form (e.g. degree of channel incision, braiding etc.) appears to be fairly consistent from image to image.</p>
A3	9	<p>Phase 1 Impacts to Wildlife Movement: The proposed project area provides an important movement corridor for aquatic species and mammals from coastal to inland portions of San Juan Creek. The Draft PEIR concludes that impacts to wildlife movement will be less than significant with implementation of a Fish Rescue and Relocation Plan (BIO 1) and an increase in steelhead migration days compared to modeled existing conditions (BIO 5). We disagree with this conclusion for several reasons:</p> <p>a) The analysis does not consider that arroyo chub may get washed below the rubber dams and may be unable to return upstream. No mitigation is provided for the permanent loss of arroyo chub individuals from the breeding population. We are concerned that proposed fish rescue plan is not intended to address fish that are washed downstream from the dams.</p>	<p>In response to this comment, Mitigation Measure BIO-1 has been modified to include an operational component to the Fish Rescue and Relocation Plan. The plan would be implemented in consultation with NMFS. Fish that are washed downstream would be able to use the fishways to return upstream which would reflect natural conditions. See response to comment A2-3.</p>

Letter No	Comment No	Comment	Response
A3	10	b) The existing number of passage days for steelhead may be greater than the modeled conditions (as discussed above), so an increase over modeled conditions may not be an improvement for steelhead. It is not clear how the fish passage structures or other improvements will be monitored to demonstrate an improvement over modeled conditions. It also does not appear that maintenance will be conducted specifically to ensure fish passage opportunities will be provided over the life of the project.	Currently, there is no viable steelhead population within the system due to passage impediments among other reasons. Estimates of the rubber dam's effects on migratory opportunities is a tool to understand the basic hydrology in an extremely variable system that may not behave according to historic averages in the future. However, the model provides a tool to gage the potential impact of the project. Although the DEIR concludes that the project would not result in a significant impact to baseline conditions, Mitigation Measure BIO-5 is included to establish SMWD as a partner in future enhancement of the stream to support steelhead. The District could act as a facility management agency responsible for maintaining fish passage infrastructure and could participate financially in developing and constructing fish passage infrastructure. This would facilitate future improvements by reducing OCDPW's responsibilities and commitments. The details of the habitat enhancements would focus on funding for channel improvements, impedance removals, data collection and monitoring, and would be developed in coordination with and approval from NMFS, USFWS, CDFW, USACE, and OCDPW. See Response to Comment A2-5.
A3	11	c) The anticipated movement paths of medium and large mammals around the proposed rubber dams and inundation areas are not provided in the Draft PEIR. We are concerned that the gradient of the cement channel sides or existing fencing may limit the potential for movement in and out of the channel. In addition, the County of Orange is in the process of converting the sloping channel walls to vertical sheet pile walls, which we would not expect medium/large mammals to be able to traverse.	The existing channel walls are sloped, providing access up the channel for local common wildlife. When the rubber dams are elevated, some of these animals would need to leave the channel up the sloped walls and circumvent the dam. When the dam is lowered, passage up the channel would not be impeded. The DEIR concludes that the blockage of the channel by the inflated dam would not significantly alter the existing condition and would not significantly impede travel by wildlife up the stream corridor.
A3	12	Phase 1 Impacts to San Juan Creek lagoon: The Draft PEIR anticipates the proposed project will affect the San Juan Creek lagoon by reducing flow velocity, increasing silt and sediment accumulation, and reducing the number of days per year that the lagoon is open to the ocean. While acknowledging these substantial project-related changes to the lagoon, the Draft PEIR does not discuss the status of existing biological resources in the lagoon (e.g., shorebirds that forage in the lagoon), or how project-related reductions in habitat quality (including water quality) will affect those resources. No mitigation for impacts to the biological resources within the lagoon is provided. In addition, we are concerned that the project will increase the frequency and extent of beach nourishment activities near the lagoon due to a reduction in sediment transport to the beach. Beach	The proposed project is not anticipated to significantly reduce dry weather in flows to the lagoon. The DEIR concludes that small reductions in lagoon wetted area and channel migratory days are less than significant since they are within the annual variability of these conditions. Every year poses different opportunities for migration due to sporadic storm event patterns. The proposed project would result in some effects, but the migratory opportunity would be dictated by the severity of individual storms and the overall storm season. The project's effects would be minor compared to this storm event variability. Furthermore, the current condition of the creeks does not support any fish migration due to in stream impediments further upstream. The proposed project would provide for fish passage and would provide assistance to in-stream impedance removal (BIO-5) as

Letter No	Comment No	Comment	Response
		nourishment activities are often association with reductions to benthic community and impacts to shorebirds.	a contribution to convert the existing condition to a viable steelhead migratory channel in the future. Finally, as noted in Master Response: San Juan Creek Lagoon and Sediment Transport, the proposed project would not change the sediment transport mechanism, ie., high storm flows. As supported by technical studies included in Appendix E, the DEIR concludes that impacts to sediment transport would be less than significant.
A3	13	<p>Phase 1 Increases in Invasive Species: The Draft PEIR does not anticipate a project-related increase in invasive plants or animals because vegetation will continue to be maintained by Orange County Public Works and because water is not expected to be impounded year-round. We are concerned that impounded water will increase the extent of invasive species in the watershed:</p> <p>a) Impounded water will encourage plant growth (both native and non-native) and will require more frequent removal efforts to ensure the flood capacity of the channel is maintained. It is not clear in the Draft PEIR if Orange County Public Works anticipates more frequent maintenance or if they will be responsible for ensuring non-native plants do not spread upstream or downstream from the project site. No mitigation measures are identified to prevent the spread of non-native plants.</p>	As described in Section 3.3, Biological Resources, in the DEIR, while the proposed dam facilities could create temporary ponded habitat for invasive species, those invasive species are already present in the watershed. In addition, surface water would be impounded behind the dams for periods of days to weeks to months during the wet season and spring depending on storm strength and duration and upper watershed groundwater conditions, which would result in a dry channel bed in a matter of weeks to months. Because of the short-lived nature of impounded water (less than year-round) behind the dams, populations of introduced or predator species are not expected to establish. Furthermore, Orange County Public Works (OCPW) currently implements vegetation management within the San Juan Creek and Arroyo Trabuco, where this vegetation management is anticipated to continue through the foreseeable future. SMWD will coordinate with OCPW if the need for more frequent maintenance is necessary. Therefore, the potential for the spread of invasive species is considered low and does not require mitigation measures. No changes to the DEIR have been made in response to this comment.
A3	14	b) The Draft PEIR states that water impounded behind the rubber dams is anticipated to last for weeks or months and acknowledges that ponded water has the potential to support aquatic invasive species, such as bullfrogs (<i>Lithobates catesbeianus</i>). Because invasive species have the potential to be washed down into the ponds from upstream and may stay there for months, they could also breed in the ponds. If a rain event occurs before the pond evaporates completely, the invasive species could spread upstream. Native fish may also become stranded in the ponds when surface flows become disconnected at the end of a rain event. We are concerned that the fish rescue plan (BIO-1) is not intended to recover native fish from the ponds prior to predation by invasive species. Substantial resources have been invested to remove of invasive plants and animals upstream of the proposed project site both in Trabuco and San Juan Creeks; therefore, we consider any project-related increase in invasive species to be a significant impact.	The project is not anticipated to increase the occurrence of invasive wildlife or plant species in the channel. See response to comment A3-13. See Master Response: Invasive Species.

Letter No	Comment No	Comment	Response
A3	15	<p>Phase 1 Groundwater Extraction: The proposed project will enable increases in groundwater extraction from existing production facilities. The Draft PEIR concludes that the increase in groundwater pumping will not impact riparian vegetation because an ongoing monitoring program (AMP) that is implemented pursuant to existing Water Rights Permits 21074 and 21138 will maintain specific groundwater levels. Monitoring for the AMP appears to focus on the health of the riparian vegetation. There is no analysis of the potential effects to other biological resources (e.g., native fish) from groundwater extraction. Because a portion of the groundwater pumping will occur upstream of the inundation area for the rubber dams, we are concerned that the proposed project has the potential to result in a change in the distribution and extent of surface flows in San Juan Creek. A reduction in surface flows upstream from the inundation area for the rubber dams could reduce the extent of habitat available for steelhead and arroyo chub.</p>	<p>The project would not increase groundwater pumping in ways that could affect surface flows. The AMP is a separate project and one that is designed to ensure that groundwater extractions do not lower groundwater levels below established thresholds. The proposed project would not change these thresholds.</p>
A3	16	<p>Program Level Analysis: The Draft PEIR concludes that implementation of future phases of the project will result in less than significant impacts to biological resources based on implementation of proposed mitigation measures in the Draft PEIR. We disagree with this conclusion because insufficient information is provided to determine the location or extent of impacts or to determine if opportunities are available to provide suitable mitigation for those impacts. Opportunities to replace functioning riparian and aquatic habitat are increasingly rare in Orange County.</p>	<p>As stated in Chapter 2, Project Description, the DEIR analyzed Phase I of the project at project-level and analyzed subsequent phases of the project programmatically. In accordance with Section 15168 of the CEQA Guidelines, a Program EIR allows the Lead Agency to consider program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts. In addition, Section 15168 of the CEQA Guidelines states subsequent activities in the program must be examined in light of the Program EIR to determine whether an additional environmental document must be prepared. At this time, the level of specificity of the subsequent phases of the project is influx, where the exact timing and location of impacts to biological resources cannot be definitely stated. However, the DEIR includes the appropriate mitigation measures to reduce impacts to biological resources to a less than significant level in subsequent phases based on the level of detail at this time. When SMWD initiates future projects in subsequent phases of this project, SMWD will be required to determine if those actions are within the scope of this PEIR. If SMWD determines that future projects are outside of the scope of this PEIR and/or could result in additional environmental impacts, subsequent CEQA documentation would be required at that time.</p>

Letter No	Comment No	Comment	Response
A3	17	Finally, the Draft PEIR concludes that the proposed project will not conflict with an adopted Habitat Conservation Plan. Future phases of the project may occur within the planning areas for the Southern Orange HCP and/or the Central/Coastal Orange Subregion Natural Community Conservation Plan/Habitat Conservation Plan (Central/Coastal Orange NCCP/HCP); however, mitigation measure BIO-6 only requires consistency with the Central/Coastal Orange NCCP/HCP. We are concerned that future phases of the project have the potential to impact biological resources within the Southern Orange HCP Habitat Reserve.	The DEIR determined that while impacts to riparian habitat and other sensitive vegetation communities during subsequent phases of the proposed project would be avoided to the greatest extent feasible, it is acknowledged that future projects may not be able to avoid these habitats. Implementation of mitigation measure BIO-3 would reduce impacts to less than significant by requiring avoidance of riparian habitat and other sensitive vegetation communities, where feasible, or implementation of compensatory mitigation if impacts could occur. Furthermore, SMWD would also implement mitigation measure BIO-6 to ensure future activities occurring within the Central/Coastal Subregion and potentially impacting species covered by the plan would be undertaken in a manner consistent with the plan's goals, objectives, and stipulations. Thus, SMWD would mitigate any potential impacts to biological resources covered by the Central/Coastal Orange NCCP/HCP to a less than significant level in subsequent phases of the project. No changes to the DEIR have been made in response to this comment.
A3	18	In summary, the San Juan Creek watershed is an ecologically significant watershed that is one of the few remaining undammed watersheds in southern California, and the Draft PEIR does not adequately consider or address the potentially significant direct and indirect effects to the biological resources resulting from the proposed project. We recommend that additional alternatives to the proposed project are considered that minimize the extent of impacts to important aquatic resources in San Juan Creek watershed. We appreciate the opportunity to comment on the subject Draft PEIR and would like an opportunity to meet with the project proponents and NMFS to discuss issues identified in our letter prior to the release of a Final EIR. If you have any questions regarding these comments, please contact Christine Medak of this office at (760) 431-9440 ext. 298.	The proposed project is a local stormwater capture project designed to utilize local resources to augment groundwater recharge, augmenting groundwater supplies. The DEIR identifies alternatives to the project that would not meet water supply objectives. The existing habitat value in the affected portions of San Juan Creek and Arroyo Trabuco is very poor. There is no riparian habitat in these areas that are essentially barren channels with a rocky substrate. The proposed project provides an opportunity to enhance the channel's biological values through mitigation and funding contributions to steelhead recovery in the creek system. SMWD welcomes the opportunity to work with USFWS and NMFS to address concerns over the project impacts to existing habitat and to future steelhead recovery objectives.

Letter A4: California Department of Toxic Substances Control

A4	1	The Department of Toxic Substances Control (DTSC) has reviewed the subject EIR. The following project description is stated in the EIR: "The Santa Margarita Water District (SMWD), in conjunction with South Coast Water District (SCWD), is proposing to the San Juan Watershed Project (proposed project) that would develop facilities to manage surface water resources to enhance groundwater resources of the San Juan Groundwater Basin. The proposed project would increase the capture and storage of urban runoff and stormwater, optimize the use of recycled water for beneficial reuse, minimize the potential for undesirable impacts, and	This comment does not address the adequacy or accuracy of the DEIR and therefore, no further response is required.
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		augment local groundwater supplies to reduce the region's dependence on imported water."	
A4	2	Based on the review of the submitted document DTSC has the following comments: 1. The EIR states, "As shown above in Table 3.7-1, there are two open-case hazardous materials sites near the rubber dam facilities: the Capistrano Car Wash (32841 Camino Capistrano) and the Kinoshita Farm Site (32701 Alipaz Street). DTSC recommends investigation and remedial actions, if necessary, overseen by the appropriate regulatory agencies be conducted prior to the new development or any construction.	As stated in Section 3.7, Hazards and Hazardous Materials, of the DEIR, the Capistrano Car Wash and Kinoshita Farm sites are not located in the San Juan Creek channel or in the proposed facilities' locations. Thus, construction activities associated with the proposed project would not impact these two listed hazardous sites. High flows within the creek channel currently recharge water into the groundwater basin from this location adjacent to the neighboring contamination sites. Similar to existing conditions, the enhanced recharge within the creek channel would not mobilize contaminated soils in these contaminated areas, nor would enhanced recharge affect current remediation efforts. Furthermore, it is not the responsibility of the District to undergo remedial actions for the cleanup of these two sites. No changes were made to the DEIR in response to this comment.
A4	3	The EIR further states, "Rubber Dam No. 1, Rubber Dam No. 2, and their associated facilities would be located south of the two hazardous materials sites, and therefore could be at risk of potential contaminants extending from the two sites. However, in California Building Industry Association v. Bay Area Air Quality Management District (commonly referred to as the "Reverse CEQA" case), the California Supreme Court held that CEQA does not require an analysis of the environment's impact on a project. Based on the text of the statute, the court held that CEQA review should be "limited to those impacts on a project's users or residents that arise from the project's effects on the environment" (Allen Watkins 2015). Therefore, these hazardous materials sites do not require further analysis under CEQA on their impact on the proposed project." This quote is repeated several places in the EIR. DTSC recommends assessment of potential impact to HH&E from sources of contamination within the project area as well as offsite nearby sources.	The comment does not define the meaning of HH&E. The existing contamination would not pose an impact on the project since no excavation would occur in the contaminated areas. In addition, since high flows within the creek channel currently recharge water into the groundwater basin from this location adjacent to the neighboring contamination sites, the proposed project would not significantly change the existing condition. The enhanced recharge within the creek channel would not mobilize shallow contamination in soils, nor would enhanced recharge affect current remediation efforts. The goal of the project is to augment the groundwater basin with high water quality. Therefore, the analysis in the DEIR is adequate and no changes were made to the DEIR in response to this comment.
A4	4	If the project plans include discharging wastewater to a storm drain, you may be required to obtain an NPDES permit from the overseeing Regional Water Quality Control Board (RWQCB).	No storm drain discharges are proposed in the project. Subsequent phases of the proposed project would augment stream flows with recycled water compliant with Title 22 regulations for water reuse. The initial phase of the project would not be required to obtain a NPDES permit. No changes were made to the DEIR in response to this comment.

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A4	5	If planned activities include building modifications/demolitions, lead-based paints or products, mercury, and asbestos containing materials (ACMs) should be investigated and mitigated/disposed of in accordance with all applicable and relevant laws and regulations. In addition, evaluate whether polychlorinated biphenyls (PCBs) containing materials are present in onsite buildings and address as necessary to protect human health and the environment. DTSC recommends evaluation, proper investigation and mitigation, if necessary, of onsite areas with current or historic PCB-containing transformers.	As stated in Section 3.7, Hazards and Hazardous Materials, of the DEIR, construction activities implemented under the proposed project would be required to comply with current regulations to ensure that hazardous building materials are handled properly. In any case, the project would require little demolition. No changes were made to the DEIR in response to this comment.
A4	6	If the site was used for agricultural or related activities, residual pesticides may be present in onsite soil. DTSC recommends investigation and mitigation, as necessary, to address potential impact to human health and environment from residual pesticides.	The proposed project would develop water infrastructure within the existing channelized San Juan Creek and/or Arroyo Trabuco, existing roadway right-of-ways, and existing wastewater treatment facilities. All of these locations are presently developed and do not support agricultural uses and as such, the potential for residual pesticides to be present is considered low. In addition, the construction activities, including any ground disturbing activities, would be required to comply with all regulations related to hazardous materials, including pesticides. Therefore, the proposed project would not result in impacts to human health or the environment from residual pesticides. No changes were made to the DEIR in response to this comment.
A4	7	If soil contamination is suspected or observed in the project area, then excavated soil should be sampled prior to export/disposal. If the soil is contaminated, it should be disposed of properly in accordance with all applicable and relevant laws and regulations. In addition, if the project proposes to import soil to backfill the excavated areas, proper evaluation and/or sampling should be conducted to make sure that the imported soil is free of contamination.	Construction activities for the proposed project would include ground-disturbing activities, including excavation of up to five feet. Imported soils are not anticipated during construction. The proposed project would be required to comply with all applicable regulations related to soil contamination and proper sampling and disposal protocol. No changes were made to the DEIR in response to this comment.
A4	8	If during construction/demolition of the project, soil and/or groundwater contamination is suspected, construction/demolition in the area should cease and appropriate health and safety procedures should be implemented. If it is determined that contaminated soil and/or groundwater exist, the EIR should identify how any required investigation and/or remediation will be conducted, and the appropriate government agency to provide regulatory oversight.	As stated above, all construction activities implemented under the proposed project would be required to comply with all applicable regulations related to properly handling contaminated soils in compliance with current regulations. No changes were made to the DEIR in response to this comment.
A4	9	If you have any questions regarding this letter, please contact me at (714) 484-5380 or by email at Johnson.Abraham@dtsc.ca.gov.	SMWD appreciates the comments submitted by DTSC on the DEIR. SMWD will take these comments into consideration prior to making a decision on the Proposed Project and Final PEIR.

Letter No	Comment No	Comment	Response
Letter A5: California Department of Parks and Recreation			
A5	1	<p>As neighboring land managers, State Parks is interested in and has potential concerns about the effects from the proposal to develop facilities to manage surface water resources to enhance groundwater resources of the San Juan Groundwater Basin. We have reviewed the draft Environmental Impact Report (EIR) titled San Juan Watershed Project. We understand that the project proposed the installation of three rubber dams to maximize groundwater recharge and reduce surface flow water to the mouth of San Juan Creek and Doheny State Beach.</p>	<p>This comment provides an introduction to the comment letter and does not address the adequacy or accuracy of the DEIR. No further response is required.</p>
A5	2	<p>The mouth of San Juan Creek is managed by California State Parks and provides many resources for wildlife, including resident and migrating shorebirds. The federally threatened Western snowy plover (WESP) has been observed overwintering and roosting at Doheny State Beach and has been observed foraging alongside many other shorebirds within the lagoon that forms at the mouth of the creek. The loss of surface water flow would reduce and possibly eliminate water at the creek mouth for much of the year and would ultimately change the conditions that perpetuate insects and other invertebrates, an important food source for this sensitive species as well as the other bird species that rely on this creek mouth for forage. WESPs overall have been experiencing a decline in roost numbers throughout Orange and Los Angeles counties. The creek mouth coupled with the presence of beach wrack makes Doheny State Beach one of the few areas in south Orange County that hosts overwintering WESP, and changing these conditions may jeopardize habitat suitability for the WESP. We feel that the indirect impact to WESP and other shorebirds has not been addressed within the Draft EIR.</p>	<p>The statement that the proposed project could reduce and possibly eliminate water at the creek mouth for much of the year is incorrect. The proposed rubber dams within San Juan Creek and/or Arroyo Trabuco would act as in-stream detention facilities for wet-weather flows to promote in-stream recharge of the groundwater basin by allowing for the ponded water to naturally infiltrate into the stream bed. As described in Master Response: Lagoon, the project would not reduce the natural processes or habitat values of the lagoon or Doheny State Beach. Water and sediment would continue to reach the lagoon during wet and dry weather similar to existing conditions, resulting in a lagoon and beach habitat similar to existing conditions. Additional analysis of the effects of the project on lagoon conditions has been conducted and added as Appendix E of the FEIR. The additional hydrology analysis shows that the project's effects to depth, area, and salinity would be minor. No impacts would be experienced along the beach, and no impacts to WESP or WESP habitat would occur as a result of the project. Similarly, the effects of the project on the lagoon would not significantly reduce the existing habitat values for aquatic species including tidewater goby or steelhead. The lagoon characteristics are driven by local hydrology and precipitation. The disparity between wet years and dry years on lagoon area, depth and salinity far exceeds the project's effects as shown in Appendix E. Furthermore, the current condition of the lagoon as described in Appendix E is poor. See Master Response: San Juan Creek Lagoon.</p>
A5	3	<p>Doheny State Beach has experienced an increased loss of sediment downcoast of San Juan Creek over the past decade. The large swells and El Nino events of 2016 further exasperated the high levels of erosion and threatened the south day use parking lot as well as a restroom facility, an area that receives a high amount of visitor use. By preventing the low and moderate level flooding events from carrying upstream sediment to the</p>	<p>As described in the response to comment A5-2 above, the proposed rubber dams within San Juan Creek and/or Arroyo Trabuco would act as small in-stream detention facilities for wet-weather flows to promote in-stream recharge of the groundwater basin by allowing for the ponded water to naturally infiltrate into the stream bed. The proposed dams would not reduce the sediment load within the creek</p>

Letter No	Comment No	Comment	Response
A6	6	The Draft PEIR incorrectly describes the agencies responsible for ensuring compliance with Section 401 of the Federal Clean Water Act. The State Water Board, not the Regional Water Boards, is responsible for water quality certifications for activities involved or associated with a water diversion project where water is appropriated or is put to beneficial use and which requires a permit issued by the U.S. Army Corps of Engineers. The Project proposes construction of facilities associated with a water diversion project within the stream channel of San Juan Creek and/or Arroyo Trabuco. Such construction may require a Federal permit in accordance with the Federal Clean Water Act. Any applicant seeking a Federal permit where the proposed activity may result in a discharge to surface water is required to obtain a water quality certification from the State of California, and the State Water Board would issue such a certification.	The Section 401 certification process is administered through the local RWQCBs, but the ultimate authority for issuing the certification resides with the SWRCB. Comment noted.
A6	7	If you have any questions, please contact Mitchell Moody at (916) 341-5383 or mitchell.moody@waterboards.ca.gov. Written correspondence or inquiries should be addressed as follows: State Water Resources Control Board, Division of Water Rights, Attn: Mitchell Moody, P.O. Box 2000, Sacramento, CA, 95812-2000.	SMWD appreciates the comments submitted by State Water Resources Control Board on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR.

Letter A7: California Department of Fish and Wildlife

A7	1	The California Department of Fish and Wildlife (Department) has reviewed the above referenced San Juan Watershed Project Draft Program Environmental Impact Report (PEIR), dated December 2017. The Department provided comments on the Notice of Preparation (NOP) for the project in a letter dated February 1 ,2017. The Department appreciates the Santa Margarita Water District (SMWD) granting a time extension until March 7, 2018, to provide comments on this document1. The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act, [CEQA] Guidelines §15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (Fish and Game Code § 2050 et seq.) and Fish and Game Code (FGC) section 1600 et seq. The Department also administers the Natural Community Conservation Planning program.	The comment does not address the adequacy or accuracy of the DEIR. No further response is required.
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Letter No	Comment No	Comment	Response
A7	2	<p>The San Juan Watershed Project (project) would implement an integrated water resources management plan intended to maximize beneficial uses of the San Juan Groundwater Basin. The project would increase the capture and storage of urban runoff and stormwater, optimize the use of recycled water for beneficial reuse, minimize the potential for undesirable impacts, and augment local water supplies to reduce the region's dependence on imported water. The project would be constructed in multiple phases. Phase I would construct and operate three inflatable rubber dams within San Juan Creek, located in the City of San Juan Capistrano and the County of Orange, to provide groundwater recharge of stormwater that would otherwise flow to the ocean. During storm events the rubber dams would remain inflated, provided the flow in the channel remains less than 1-foot greater than the rubber dam crest. The dams would deflate when this is exceeded and re-inflate when the flow in the channel is reduced.</p> <p>Subsequent phases, which are not analyzed in the draft PEIR, would construct additional rubber dams in undisclosed locations within San Juan Creek.</p>	The comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A7	3	<p>Our primary concerns regarding the draft PEIR include the adequacy of analysis of project impacts under CEQA and potential species impacts. Specifically, we are concerned about the movement of southern California steelhead (steelhead; <i>Oncorhynchus mykiss</i>, a species listed as endangered under the federal Endangered Species Act [ESA]), tidewater goby (<i>Eucyclogobius newberryi</i>, listed endangered under ESA), and Pacific lamprey (<i>Lampetra tridentata</i>; a California and federal species of special concern}, and other aquatic species. We offer the following comments and recommendations to assist the SMWD in avoiding or minimizing potential project impacts on biological resources.</p>	See Master Response: Steelhead Recovery. See also, Master Response: San Juan Creek Lagoon.
A7	4	<p>The SMWD published the Department's letter, "Comments on the Notice of Preparation of a Draft Environmental Impact Report for the San Juan Watershed Project, Orange County, CA (SCH#2016121001)," in Appendix A of the draft PEIR; however, SMWD did not address our comments, neither in the body of the draft PEIR nor as annotations in Appendix A. The Department remains concerned that the draft PEIR did not take into account the recommendations and observations provided in our NOP comments for this project.</p>	The Draft EIR included the NOP comment letter in Appendix A. CEQA does not require that formal responses be prepared for NOP comments. The NOP comment letter requested studies be conducted to evaluate effects to biological resources. The Draft EIR includes a Biological Technical Reports as Appendix C. The Draft EIR compiled information to address each of the comments included in the NOP letter in <i>Section 3.3 Biological Resources</i> . Specific comments are addressed here regarding outstanding issues identified in this Draft EIR comment letter.

Letter No	Comment No	Comment	Response
A7	5	<p>We are especially concerned that, as stated in the above-referenced letter, project activities are not in compliance with the FGC. Section 5901 of the FGC states that, "except as otherwise provided in this code, it is unlawful to construct or maintain in any stream in Districts [4], any device or contrivances that prevents, impedes, or tends to prevent or impede, the passing of fish up and down stream.". Given that the project area is in District 4 (FGC § 11010; see attached map), the final PEIR should provide a thorough analysis of project activities with regard to this section, as well as a discussion as to whether project activities are misaligned with this or any other section of the FGC, with special consideration given to Chapter 3, Articles 1-5.</p>	<p>The proposed project would install inflatable rubber dams within the creek channel that would require the approval of CDFW through a Streambed Alteration Agreement under Fish and Game Code 1602. The DEIR identifies impacts, significance thresholds, and mitigation strategies that are necessary to implement this storm water capture project, including the implementation of fishways to ensure passage of fish over the inflated dams. Rubber dams have been implemented throughout California with approval from CDFW. SMWD is interested in constructing a project complies with Section 5901 and that both enhances the creek's ability to support native species compared to existing conditions and augments local water supplies to reduce our reliability on imported water.</p>
A7	6	<p>The Department requests further clarification as to how the draft PEIR concluded that cumulative impacts of the project on biological resources would be less than significant with mitigation. The draft PEIR analyzes Phase 1 of construction, which includes the installation of three rubber dams in San Juan Creek. Subsequent phases would construct up to a total of 12 dams in undisclosed locations within San Juan Creek (PEIR 2-20). Analysis of construction activities outside of Phase 1 is not provided, beyond the statement in the Cumulative Impacts section that, "during the subsequent phases, implementation of these same measures as well as BIO-3 and BIO-6 would reduce potential impacts to special status species, sensitive vegetation communities, state- and federally-regulated waters, wildlife movement, and local plans, policies, and ordinances to less than significant" (PEIR 4-13). Without locations for subsequent infrastructure, it is unclear how it was concluded that the whole of the project's cumulative impacts will be less than significant with mitigation.</p>	<p>As noted above, the San Juan Creek and Arroyo Trabuco do not support viable steelhead populations. The proposed locations for the dams are denuded with almost no biological value. The project would have little impact on the San Juan Creek lagoon, and would not reduce the habitat values in the lagoon for native species. The DEIR identifies potential impacts to future cumulative conditions when steelhead may return to the creek through contributions to channel improvements for migratory fish. In any case, approval from NMFS, USFWS, USACE and CDFW would be required to implement the project. It is SMWD's intent to partner with you and the other agencies to develop a project with benefits to native species when compared to the existing degraded conditions.</p>
A7	7	<p>The Department has further concerns that FGC section 5937 was not considered while analyzing cumulative impacts. This section states that, "the owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam." Without the disclosure of the locations of the dams to be installed in other phases of this project, it is not clear how project activities will or will not comply with FGC section 5937, and therefore the Department recommends that the final PEIR be amended to include a thorough and specific discussion of this section of the FGC.</p>	<p>The dam locations are identified in Figure 2-2. The fishway designs are provided in Figures 2-4a through 2-4c. The rubber dams would be installed similar to several other dams installed throughout southern California streams including the San Gabriel River and Santa Ana River in compliance with Fish and Game Section 5937 and in coordination with CDFW. This process would be regulated under a Streambed Alteration Agreement and conditions for dam construction and operation would be negotiated during the permitting process.</p>

Letter No	Comment No	Comment	Response
A7	8	<p>Additionally, the Cumulative Impacts section briefly states that, " ... drop structures within the channels that are currently acting as fish passage barriers may be removed or modified to allow for increased passage. The proposed project would maintain sufficient fish passage opportunities in the event that the upstream impediments are removed" (PEIR 4-13). Planning efforts in the past 5 to 10 years have led to several barrier removals in the mid and upper watershed in San Juan, Trabuco, and Holy Jim Creeks. The United States Forest Service has removed 18 of 79 instream check dams since 2014 and plans to remove 25 in 2018 and the remainder in 2019. It is not directly explained how the mitigation measures for the subsequent phases, which are not described in the draft PEIR, would ensure that impacts to the entire watershed would be less than significant given these ongoing projects.</p>	<p>The passage cited from page 4-13 of the DEIR indicates that the proposed project would maintain fishways and would therefore not contribute considerably to fish passage barriers in the creek. The DEIR acknowledges that cumulative projects have been implemented to improve the fish passage potential of the creek. Phase 2 is identified in a programmatic fashion because details of the project are not sufficiently developed to avoid speculation. Future assessment will be required prior to implementing Phase 2 in order to determine potential impacts of the project once designs are more fully developed including total number of dams, dam locations, water source and quality, seasonal operational variances etc..</p>
A7	9	<p>A cumulative impacts discussion, " ... should be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute rather than the attributes of other projects which do not contribute to the cumulative impact" (CEQA Guidelines §15130[b]). The PEIR lacks information regarding activities and mitigation beyond Phase 1, discussion regarding FGC section 5937, and analysis of the many projects that are intended to improve fish passage in San Juan Creek. The final PEIR should include expanded analysis and discussion of the additional phases of the project, mitigation associated with those phases, and how all phases will or will not impact future projects to improve steelhead passage in San Juan Creek. How the project's cumulative impacts intersect with FGC should also be discussed at length.</p>	<p>Phase 2 is identified in a programmatic fashion because details of the project are not sufficiently developed to avoid speculation. Future assessment will be required prior to implementing Phase 2 in order to determine potential impacts of the project once designs are more fully developed including total number of dams, dam locations, water source and quality, seasonal operational variances etc..</p>
A7	10	<p>The draft PEIR discusses five alternatives to the proposed project, two rejected alternatives and three considered alternatives, which analyze impacts of various degrees of infrastructure in San Juan Creek. The Department disagrees with the rejection of the Off-Stream Storage and Recharge Alternative as described in the draft PEIR (pages 5-3 and 5-4). The discussion presented does not appear to have explored injection wells as a means to increase the volume of water in the aquifer, but rather used passive filtration as the principal method. The Department would like to emphasize that the impacts to aquatic biological resources associated with off-channel storage are far fewer than the ongoing impacts of the Preferred Alternative, and that the Off-Stream Storage and Recharge Alternative does not conflict with FGC Chapter 3, Articles 1-5 (see Comment 1).</p>	<p>The use of injection wells requires large off-channel storage basins to capture storm water prior to injecting it. The stormwater in these creeks arrives and dissipates too quickly to inject water into the ground without significant storage. The surrounding areas do not afford this land availability. Furthermore, this alternative would still require in-channel diversion structure that would be similar to a rubber dam. Impacts to the stream channel would not be avoided with this alternative. For these reasons, an injection well alternative is not analyzed in detail within this PEIR.</p>

Letter No	Comment No	Comment	Response
A7	11	<p>Furthermore, the analysis of this rejected alternative was " ... evaluated during the SJBA Foundational Actions Fund (FAF) study" (PEIR 5-4). No further reference, citation, or discussion of this document is made, nor is the document available in the draft PEIR. The study should be incorporated by reference and made available, per CEQA Guidelines section 15150.</p> <p>Without access to this study, the Department cannot determine whether analysis of this alternative was appropriate to the procedural and substantive requirements of CEQA. Alternatives are to include an "alternative [that] would impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Guidelines §15126.6[b]), and, "the range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making" (CEQA Guidelines §15126.6[f]). The Department strongly recommends that an alternative design such as the Off-Stream Storage and Recharge Alternative, which clearly demonstrates avoidance and minimization of impacts to associated species to the maximum extent practicable (CEQA Guidelines §15021[a][2]), be reconsidered. We also request that the SJBA FAF study be made available as part of Appendix C: Biological Technical Report of the final PEIR.</p>	<p>The Draft EIR describes on page 5-3 that off-stream storage opportunities are not available. The FAF study has been included as Appendix F to the Final EIR for easy reference.</p>
A7	12	<p>The Department has further concerns regarding mitigation measure BIO-5, which states, "The Santa Margarita Water District (SMWD) shall coordinate with NMFS [the National Marine Fisheries Service] and OCPW [Orange County Public Works] to participate in steelhead habitat restoration priorities within the San Juan Creek watershed. Participation may include implementation of in-channel fish passage improvements within San Juan Creek and mutually agreed upon funding and/or planning assistance commensurate with SMWD's level of effect to assist the resource agencies with the Steelhead Core 1 Recovery Population goals. These migratory passage improvements implemented with assistance from SMWD would result in increased migration days within San Juan Creek and Arroyo Trabuco compared to modeled existing conditions" (PEIR ES-7). Mitigation measures " ... must be fully enforceable through permit conditions, agreements, or other legally binding instruments" (CEQA Guidelines §15126.4[2]). Without a firm, specific, written commitment to participation, planning, and/or the execution of a financial instrument to develop and remediate existing fish passage barriers within the watershed, the Department concludes that this mitigation measure does not bring impacts of project activities on aquatic species below a significant level. In order for BIO-5 to be effective, we recommend that the mitigation measure be rewritten to include specific, enforceable actions and commitments to steelhead habitat restoration, described in as much detail as possible. We</p>	<p>The current condition of the creek does not support a viable steelhead population or migration habitat. Nonetheless, the DEIR recognizes that in the future, the stream may support steelhead. Although CEQA requires analysis of existing conditions at the time of the NOP, the DEIR acknowledges that future conditions may change. Under current conditions there is no impact to steelhead migration because the habitat does not exist due to several substantial passage barriers. Mitigation Measure BIO-5 requires SMWD to contribute to channel improvements that will result in better fish passage conditions than currently exists. The details of this fully enforceable and quantifiable commitment would be determined through consultation with NMFS, USFWS, and CDFW. The District could act as a facility management agency responsible for maintaining fish passage infrastructure and could participate financially in developing and constructing fish passage infrastructure. This would facilitate future improvements by reducing OCPW's responsibilities and commitments. The amount of funding and participation would be determined through cooperative agreements of interested parties and ultimately would be approved by NMFS. The commitment to participate in a meaningful way presents a benefit that would not occur otherwise without the project. The DEIR acknowledges that the project cannot be implemented without approval from the wildlife</p>

Letter No	Comment No	Comment	Response
		also request that the Department be included in the measure, along with NMFS and OCPW, regarding consultation on restoration efforts.	agencies SMWD looks forward to partnering with CDFW and other agencies to develop a program of channel improvements that would leave the channel more passable than under current conditions.
A7	13	The Department remains concerned regarding the following factors pertaining to the impacts of the project on steel head passage, the analysis provided, and the mitigation proposed to reduce those impacts: a. the draft PEIR states that, "the minimum passable flow depth for adult steelhead in flow-through cross sections where leaping was not required was established at 0.5 foot, consistent with the Trabuco Creek steelhead barrier assessment (HOR, Inc., 2015)" (Biological Technical Report, Appendix D, page 7). The Department is unclear as to why this minimum passable flow was used, given 0.8 foot or 9.6 inches is standard for adult passage, per Department Instream Flow requirements (Taylor and Ross, 2010). The use of an incorrect standard may erroneously skew the potential impact of the project on steelhead passage;	The 0.5-foot minimum depth-of-flow criteria was used because the criteria: 1) are consistent with other recent studies performed in Southern California (HDR 2015), 2) recognize the somewhat smaller average size of adult Southern California Coast Steelhead, and 3) result in more conservative modeling results. In other words, there are more days that don't meet the criteria for passage using the 0.5-foot depth criteria than when using the 0.8-foot minimum criteria. Hence, the modeled results describe a larger potential impact from the project with the than if the 0.8-foot criteria were used. See Master Response: Steelhead Recovery, Passage Delays, Stranded Fish, and Fish Passage.
A7	14	b. there is no discussion in the draft PEIR of potential jump heights that steelhead and other aquatic species would have to navigate in order to pass over the rock riprap, the stilling basin, or the inflated and deflated dam at each location. The Department and NFMS require 0.5 foot for juvenile salmonids and 1.0 foot clearance for adult salmonids;	The rubber dams would be passable only by the fishways when they are inflated. When deflated the riprap and stilling basins would be passable to adult salmonids because the dam foundations would be low enough (e.g., less than one foot) to allow fish to pass up stream.
A7	15	c. the impact of stress and delayed migration, which is caused when salmonids are required to navigate over multiple dams and/or through multiple fish ladders in a system known to be "flashy" is not discussed in the Biological Technical Report; and	As described in Master Response: Steelhead Passage Delays, the dams may somewhat delay upstream and downstream migration rates compared to the existing channel conditions. However, the impoundments of water behind the dams will be deeper and slower in velocity compared to the existing channel conditions. Deeper and slower flows may improve migration rates through the channel length.
A7	16	the proposed design for the fish ladder at each site does not include enough detail to determine if it will be adequate to provide for passage of adults and juvenile steel head. The Department requests that the final Biological Technical Report be amended to include the following information regarding fish ladder design: i. examples of where this design is currently installed and functioning to pass salmonids; ii. the flow conditions under which this design will function appropriately; and iii. information on how debris will be prevented from entering the ladder or how debris that becomes trapped in the fish ladder will be removed during the migration events. We are especially concerned about this because generally, once the flows are passable for fish, it is unsafe for people to	See Master Response: Steelhead Recovery The DEIR identifies NMFS and USFWS as Responsible Agencies. Final designs of the fishways is required prior to obtaining permit approvals from the regulators. However, CEQA requires that potential impacts be identified, the significance determined, and mitigation developed where feasible. The DEIR complies with CEQA in identifying impacts, significance, and mitigation. The level of detail requested in the comment on the fishway design is more appropriate in permitting documentation.

Letter No	Comment No	Comment	Response
		dislodge debris. The Department recommends that these factors be thoroughly analyzed and discussed in the final PEIR and Biological Technical report, in order to ensure that impacts of the project on steelhead passage are less than significant with the proposed mitigation.	
A7	17	The draft PEIR does not analyze impacts to Pacific lamprey independently from other aquatic species. There is neither mention of the potential impacts to adult and juvenile Pacific lamprey relative to its habitat, water quality, or passage needs, nor were passage requirements for this species discussed. The passage needs of Pacific lamprey are significantly different from steelhead and other aquatic wildlife resources and should be discussed independently. The Department is concerned that without additional analysis and mitigation, project activities could impede or prevent the recovery of this species. We therefore recommend that the final PEIR be amended to include an analysis and discussion of the impacts of the project on Pacific lamprey independently of steelhead and other aquatic species, and that additional mitigation measures be incorporated if appropriate.	We have not found any documentation of an historic run of Pacific Lamprey within the San Juan Creek drainage. The CEQA baseline is existing conditions and there is no Pacific Lamprey run in the watershed, or any recovery plan that may address potential reintroduction in this watershed. We are aware of the passage differences between this species and steelhead and could modify the design of the fish passage and dam facilities to accommodate lamprey passage should CDFW, or others, endeavor to reintroduce this species into southern California coastal streams.
A7	18	We appreciate the opportunity to comment on the draft PEIR for this project and to assist the SMWD in further minimizing and mitigating project impacts to biological resources. We request that a written response our comments be provided in the final PEIR, as required per CEQA Guidelines section 15088(d). If you have any questions or comments regarding this letter, please contact Jennifer Turner, Environmental Scientist, at (858) 467-2717 or jennifer.turner@wildlife.ca.gov, or Mary Larson, Steelhead Restoration and Recovery Unit Coordinator, at (562) 342-7186 or mary.larson@wildlife.ca.gov.	The comment does not address the adequacy or accuracy of the DEIR. No further response is required.

Letter A8: Orange County Department of Public Works

A8	1	Thank you for the opportunity to comment on the Draft Program Environmental Impact Report for the San Juan Watershed Project by the Santa Margarita Water District (SMWD). The County of Orange offers for following comments for your consideration.	The comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A8	2	OC Public Works - South Orange County Watershed Management Area 1. Section 2.1-2.5 (Pages 2-1through2-21); Section 3.8 (Page 3.8-1) and Section 4.2.8 (Pages 4- 17 through 4-18): the proposed project described in the Draft Program EIR aligns with Integrated Regional Water Management (IR WM) goals for the South Orange County Watershed Management Area (OC WMA). Specifically, the project achieves multiple objectives and strategies in the South OC WMA IRWM Plan, for example: helping to control anthropogenic dry weather flows from the developed area of the	The comment does not address the adequacy or accuracy of the DEIR. No further response is required.

Letter No	Comment No	Comment	Response
		WMA through infiltration; increase the supply and use of non-potable water; and improve reliability of all water supplies with consideration for climate change stresses. Given limitations on infiltration in the San Juan Hydrologic Unit, the proposed project would encourage infiltration of dry and wet weather flows in the riverbed, where infiltration is maximized. This promotes groundwater augmentation, improved surface water quality by encouraging infiltration of urban runoff and some wet weather flows, and reduces reliance on imported water supply. In addition to aligning with the South OC WMA IRWM Plan, the stated project benefits and multijurisdictional approach are reflective of the Statewide Priorities from the 2014 California Water Action Plan and Resource Management Strategies identified by the State Department of Water Resources in the 2013 California Water Plan Update.	
A8	3	Section 2.1-2.5 (Pages 2-1 through 2-21): The proposed project implements alternatives identified within the 2014 San Juan Basin Groundwater Management and Facility Plan (SJBGMFP) to increase yield of the basin and promote local water supply; the SJBGMFP is an appendix to the 2013 IR WM Plan for the South OC WMA.	The comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A8	4	Section 2.5.1and 2.6.1, Phase I and Subsequent Phases (Page 2-9): "All rubber dams would be located within an Orange County Flood Control District (OCFCD) right-of-way." All necessary permits from the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board, San Diego Region (RWQCB), and California Department of Fish and Wildlife (CDFW), and OCFCD (OCPW/County Property Permits) are to be obtained prior to the construction of the proposed project.	The DEIR notes that the permits mentioned in the comment would be necessary to implement the project. The comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A8	5	Section 2.5.2, Subsequent Phases (Page 2-20): "Up to nine additional rubber dams would be constructed within San Juan Creek and/or Arroyo Trabuco during subsequent phases of the proposed project." In April 2017, the South OC WMA submitted the Water Quality Improvement Plan (WQIP) for the San Juan Hydrologic Unit in accordance with Provision B of the San Diego Regional MS4 Permit. Approval is expected in early 2018. The WQIP identifies and describes strategies to address the highest priority water quality conditions (Pathogen Health Risk (indicator bacteria), Channel Erosion and Associated Geomorphic Impacts, and Unnatural Water Balance/Flow Regime). As part of the Channel Erosion and Associated Geomorphic Impacts analysis, a number of segments with San Juan Creek and Arroyo Trabuco were identified as potential rehabilitation areas to address channel erosion and geomorphic impacts. During planning stages of the subsequent design and construction of the rubber dam, South OC WMA would like to collaborate with SMWD and SJBA in developing a	The comment does not address the adequacy or accuracy of the DEIR. No further response is required.

Letter No	Comment No	Comment	Response
		design plan that promotes groundwater augmentation and restores stream segments, which satisfies objectives of the SJBGMFP and WQIP.	
A8	6	Section 2.5.2, Subsequent Phase (Page 2-20): "Recycled water would be derived from one or more of the local municipal wastewater treatment plants and conveyed through pipelines to the creeks. Recycled water is currently produced from five wastewater and urban runoff treatment facilities capable of producing tertiary effluent compliant with Title 22 regulations for water reuse." Although capable of complying with Title 22 regulations for water reuse, the County is concerned discharge of tertiary treated recycled water to San Juan Creek will not meet water quality objectives outlined within the San Diego Basin Water Quality Control Plan (Basin Plan). The discharge of recycled water must be monitored and comply with water quality objectives outlined within the Basin Plan and applicable TMDLs. Other local groundwater replenishment projects within the area (Orange County Water District Groundwater Replenishment System: https://www.ocwd.com/gwrs/) utilize advanced treatment system and should be modeled to prevent the degradation of surface water quality.	As described on page 3.8-21 of the DEIR, future phases of the project that would discharge treated wastewater into the creek would be subject to Title 22 water quality requirements. Intentional recharge to a groundwater drinking water source is defined as indirect potable reuse and is regulated through permits from the SWRCB Division of Drinking Water. The proposed project would be subject to rigorous regulations designed to protect public health similar to the OCWD project.
A8	7	Section 3.1.3 Aesthetics (Page 3.1-11): "AES-I - SMWD shall prepare a Dam Maintenance Plan that includes measures to regularly inspect and clean the rubber dam structures and impoundment areas (i.e., ponded areas upstream of each dam). The Plan shall include methods for cleaning trash and debris, removing graffiti, and cleaning out sediment and residues. SMWD shall coordinate in-channel maintenance actions with the Orange County Flood Control District and the cities of San Juan Capistrano and Dana Point. SMWD shall be responsible for implementing the maintenance plan." The "Dam Maintenance Plan" (Operations and Maintenance Manual) along with a maintenance frequency and schedule will need to be submitted to OCPW for review in order to obtain the necessary encroachment permits for maintenance activities. Maintenance of the area will need to be clearly defined and will be the responsibility of SMWD. Please refer to OC Public Works - OC Infrastructure Programs - Flood Programs General Comment Number 2 below for additional guidance.	Mitigation Measure AES-1 requires that SMWD prepare a Dam Maintenance Plan. The Plan would identify access and easements approvals needed from OCDPW.
A8	8	Section 3.3, Biological Resources (page 3.3-16): "In addition, San Juan Creek and Arroyo Trabuco have undergone substantial geomorphic changes. A 2002 watershed plan for San Juan Creek noted riverine and riparian habitat impacts from channel downcutting and other erosion problems along with poor water quality (USACE 2002 cited in CEMAR 2008). The same plan noted "phenomenal degrees of erosion damage" over the past 20 years in the lower reaches of Arroyo Trabuco (<i>ibid</i>)." The WQIP identifies Channel Erosion and Associated Geomorphic Impacts as a	Phase 2 is evaluated at a programmatic level of detail. Additional assessment will be required prior to implementing Phase 2. The District would develop designs compatible with County channel improvement plans.

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		high priority water quality condition. Subsequent phases of rubber dam design and implementation may be located within potential rehabilitation areas to address channel erosion and geomorphic impacts. Although, Phase I of the proposed project is not located within potential rehabilitation areas, the Program EIR should address the potential impacts to these areas due to subsequent phases of the proposed project.	
A8	9	Section 3.3.3, Biological Impact Analysis (Page 3.3-32): "In addition, the San Diego RWQCB Municipal Separate Storm Sewer System (MS4) Permit requires all construction projects to implement effective BMPs for erosion control, sediment control, runoff and runoff control, and active/passive sediment treatment systems. Compliance with the Construction General Permit and the MS4 Permit would reduce potential impacts to water quality to less-than-significant levels." In addition, the proposed project would require the development of a Water Quality Management Plan (WQMP) in accordance with the South Orange County Model WQMP/Technical Guidance Document (TGD), which was developed to comply with land development requirements the MS4 Permit.	Comment noted. The proposed project would be subject to MS4 permit requirements.
A8	10	Section 3.3 .3, Biological Impact Analysis (Page 3.3-37): "In addition, while the slowing and ponding of water upstream of each rubber dam creates conditions suitable for riparian and aquatic vegetation establishment, ongoing vegetation management by OCPW following construction of the proposed project would prevent this from occurring within the BSA." Please clarify which areas are proposed to be maintained by SMWD and which areas by OCPW.	The Dam Maintenance Plan required by Mitigation Measure AES-1 would identify the channel maintenance responsibilities. SMWD would be responsible for ensuring the impact is mitigated through implementation of an effective plan. In response to this comment letter Mitigation Measure AES-1 has been modified as follows: AES-1: SMWD shall prepare a Dam Maintenance Plan that includes measures to regularly inspect and clean the rubber dam structures and impoundment areas (i.e., ponded areas upstream of each dam). The Plan shall include methods for cleaning trash and debris, removing graffiti, and cleaning out sediment and residues. <u>The Plan would require annual maintenance and trash removal of the dam and fish passage prior to the rainy season consistent with OCDPW standards.</u> SMWD shall coordinate in-channel maintenance actions with the Orange County Flood Control District and the cities of San Juan Capistrano and Dana Point. SMWD shall be responsible for implementing the maintenance plan.

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A8	11	Section 3.3.3, Biological Impact Analysis (Page 3.3-37): "Indirect impacts would result from decreased flow velocity upstream of each dam, as well as silt and sediment accumulation which would be released when the dams deflate during severe storm events. The result would be fewer but larger sediment discharge events." This can potentially deteriorate water quality and contribute to downstream impairments as accumulated sediment will be transported downstream during wet weather conditions. Sediment transport can be mitigated through regular maintenance of the area upstream of the rubber dam and the stilling basins. Please clarify the maintenance frequency SWMD will follow to prevent the transport of accumulated silt and sediment.	The Dam Maintenance Plan required by Mitigation Measure AES-1 would identify the impoundment cleaning responsibilities. SMWD would be responsible for ensuring the impact is mitigated through implementation of an effective plan. See Master Response: Sediment Transport. See Response to Comment A8-10.
A8	12	Section 3.3.3, Biological Impact Analysis (Page 3.3-37): "The rubber dams would be regularly maintained to remove accumulated sediment and debris." As noted above, Section 2.7.2 states, "Maintenance activities in and around the rubber dam structures would include periodic, as-needed removal of accumulated sediment and debris, inspection and replacement of the riprap scour protection, and inspection and maintenance of all concrete structures." Please clarify at what frequency the accumulation of sediments will be removed and the agency responsible for conducting the maintenance. Additionally, clarification about the potential to transport accumulated sediment and increase pollutant loads during wet weather conditions should be address.	The Dam Maintenance Plan required by Mitigation Measure AES-1 would identify the impoundment cleaning responsibilities. SMWD would be responsible for ensuring the impact is mitigated through implementation of an effective plan. See Master Response: Sediment Transport. See Response to Comment A8-10.
A8	13	Section 3.3.3, Biological Impact Analysis (Page 3.3-42 - 43): "However, as discussed in Section 2.7.2, removal of accumulated sediment and debris at the dams would be performed on an as-needed basis." As noted above, frequency of maintenance accumulated sediment and debris removal should be defined.	The Dam Maintenance Plan required by Mitigation Measure AES-1 would identify the impoundment cleaning responsibilities. See Master Response: Sediment Transport. See Response to Comment A8-10.
A8	14	Section 3.5-2, Geology Impact Analysis (Page 3.5-14): "Should the subsequent phases result in disturbance of less than 1 acre during construction activities, then compliance with minimum BMPs would be required as specified by the Orange County Municipal Separate Storm Sewer System (MS4) Permit (SWQCB 2017) (as described in Section 3.8, Hydrology and Water Quality). Compliance with the required SWPPP and identified BMPs would ensure soil erosion and loss of topsoil impacts would be reduced to less than significant." In addition, the proposed project would require the development of a WQMP in accordance with, via the South Orange County Model WQMP/Technical Guidance Document (TGD), which was developed to comply with land development requirements of the MS4 Permit.	Comment noted. The proposed project would be subject to MS4 permit requirements.

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A8	15	<p>Section 3.8.2, Hydrology and Water Quality Environmental Settings (page 3.8-2): "Surface water quality data collected from 2006 to 2010 from locations across the entire San Juan Basin were tabulated and evaluated in the San Juan Basin Groundwater and Facilities Management Plan (WEI 2013). Water samples were analyzed for total dissolved solids (TDS), nitrate, sulfate, chloride, manganese, and iron. The results were compared to primary or secondary maximum contaminant levels (MCLs), also referred to as primary and secondary drinking water standards, which the Basin Plan also uses as water quality objectives for inland surface waters. The results for TDS, sulfate, chloride, manganese, and iron generally exceeded their respective water quality objectives with higher concentrations in the lower basin of San Juan Creek. Nitrate was not exceeded in any of the surface water samples." Please clarify whether the results were for surface water or groundwater and whether they were compared to Water Quality Objectives (WQOs) for surface water within the Basin Plans or drinking water MCLs. Similar text appears on page 3.8-4 in respect to groundwater quality.</p>	The referenced water quality data was collected from groundwater. Surface water quality within Arroyo Trabuco and San Juan Creek is affected by urban pollution including pathogens, metals, nutrients and trash. However, salinity and nitrates in stormwater is generally low compared with groundwater. The retention of stormwater for the purposes of percolation into the groundwater is a mandate required by the local MS4 permit to benefit water quality in the streams as well as to augment local groundwater quality.
A8	16	<p>Section 3.8.1, Hydrology and Water Quality Environmental Settings (page 3.8-7): "Seawater intrusion is monitored by obtaining groundwater level and water quality data at Monitoring Wells South Coast Water District (SCWD) MW-4S and MWDOC MW-2M, which serve as sentinel monitoring locations for seawater intrusion (see Figure 3.8-3 for well locations at the mouth of San Juan Creek)." Figure 3.8 - 3 does not present the well locations at the mouth of San Juan Creek.</p>	The location of groundwater wells near the seawater intrusion boundary is not relevant to the impacts of the project.
A8	17	<p>Section 3.8.2, Hydrology and Water Quality Regulatory Framework (page 3.8-14): Specific mention of the Orange County Stormwater Program's Drainage Area Management Plan (DAMP) (http://ocwatersheds.com/documents/wqmp) should be made under Program EIR heading Orange County General Plan. This document is the County's principle guiding document for nonpoint source pollution mitigation. The Program EIR should recognize the DAMP's agreements, structure, and programs, and, at the project level, make note to consider the specific water pollution control elements of the DAMP. The Program EIR should note that Priority Projects, in accordance with DAMP designation (Section 7), would require the development of a WQMP.</p>	Comment noted. The proposed project would be subject to MS4 permit requirements including preparation of a WQMP that is relevant to in-stream improvements.

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A8	18	Section 3.8.2, Hydrology and Water Quality Regulatory Framework (page 3.8-15): "The MS4 Permit details discharge prohibitions, receiving water limitations, and monitoring and assessment program requirements in an effort to prevent the pollution of receiving waters from construction and operational sites." It should be noted the MS4 permit regulates the discharge of pollutants into receiving water from the MS4.	Comment noted. The proposed project would be subject to MS4 permit requirements.
A8	19	Section 3.8.2, Hydrology and Water Quality Regulatory Framework (page 3.8-15): "A WQIP is being drafted for South Orange County focusing on the San Juan Hydrologic Unit that will identify the highest priority water quality conditions and implement strategies to improve discharge quality from MS4s; the expected completion date of the WQIP is Fall of 2017 (OCPW 2016a)." The WQIP was completed in April 2017, and is currently under review, with approval by the RWQCB anticipated in early 2018.	Comment noted. The proposed project would be subject to MS4 permit requirements including preparation of a WQMP that is relevant to in-stream improvements..
A8	20	Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-20): "SWPPP during construction that includes but is not limited to erosion control, sediment control, waste management, and good housekeeping BMPs designed to reduce water quality impacts during construction." In addition, surface water diversion and water quality monitoring will need to be addressed within the construction SWPPP as discharge are directly within a receiving water body.	Comment noted. The proposed project would be subject to SWPPP requirements.
A8	21	Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-20): "In addition to dropping sediment out of the surface flow on the upstream side of the rubber dams, the stilling basins constructed on the downstream side of the rubber dams would further reduce the energy of the flow and drop sediment out of the surface water." Please clarify whether this will be during dry weather conditions or wet weather conditions and how often the accumulated sediment will be removed from the upstream section of the rubber dams and the stilling basins. If the accumulated sediment is not removed, the potential for sediment transport downstream during wet weather conditions can be significant. Please address how this can be mitigated.	The Dam Maintenance Plan required by Mitigation Measure AES-1 would identify the impoundment cleaning responsibilities and timing. Sediment clearing would be done in the dry season to avoid the chances of flooding. See Master Response: Sediment Transport. See Response to Comment A8-10.
A8	22	Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-21): "Access to the facility would be controlled to ensure that the public would not come into contact with the detained water. Impacts to water quality and Basin Plan water quality objectives would be less than significant." The proposed project is located within San Juan Creek, a water body designated with REC-1 beneficial use. The water detained by the rubber dam has the potential to attract recreation by the local residents. Please address how this will be mitigated.	As noted in the comment, the Draft EIR states on page 3.8-21 that access to the ponded water would be controlled with fencing. Providing access control would not conflict with the beneficial uses designation. Effective access control and signage would sufficiently minimize the potential for attracting recreational use of impounded water.

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A8	23	Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-21): "Discharge of recycled water to flood control channels for groundwater recharge would require compliance with Title 22 as regulated by DDW and CDPH. SMWD would obtain a NPDES discharge permit from the San Diego RWQCB for the discharge of recycled water to the creek." A discharge permit from OCPW will also need to be obtained. Additional information such as effluent monitoring results and discharge volume will need to be submitted to OCPW.	Comment noted. Phase 2 is evaluated at a programmatic level of detail. Additional assessment will be required prior to implementing Phase 2.
A8	24	Section 3.8.3, Hydrology and Water Quality Impacts (page 3.8-21): "As described for Phase I rubber dams, incorporation of the rubber dams into the channel would slow velocity of surface flows and therefore reduce occurrences of erosion and siltation within the channels." Locations of rubber dams in subsequent phases are natural areas within Arroyo Trabuco and San Juan Creek. Sudden releases of water due the lowering of the rubber dam can potentially cause erosion within these areas.	The dams would not have sudden releases. The lowering of the dams takes approximately 30 to 45 minutes. Therefore large bursts of water would not occur. The release velocity would be well within normal storm flow increases and would not result in unnatural erosion.
A8	25	Additionally, the County's proposed WQIP identifies Channel Erosion and Associated Geomorphic Impacts as a highest priority water quality conditions and has identified areas within Arroyo Trabuco and San Juan Creek as proposed areas for rehabilitation and channel restoration. Please address how these identified areas will be protected.	The proposed project would not increase erosion potential in the channel because the release velocity would be well within normal storm flow increases. Dams would be operated to impound water when flows are sufficiently low and allow high flows to pass.
A8	26	Section 4.2.8, Hydrology and Water Quality (page 3-18): "The project would contribute to the flow reductions." The project will not reduce flows from entering the channel, but will reduce flows from getting to downstream portions of the channel.	Comment noted. The dams will act as in-channel impoundments.
A8	27	Section 7.2, References (page 7-7): "Orange County Department of Public Works (OCPW). 2016a. South Orange County Watershed Management Area (South OC WMA) Water Quality Improvement Plan (WQIP). Available at http://cms.ocgov.com/gov/pw/watersheds/documents/south_oc_water_quality_improvement_p_plan_(wqip)/default.asp ; accessed on December 19, 2016." As noted above, April 2017 is the most recent version of the WQIP. The Program EIR should reference the most recent version of the WQIP.	Comment noted. The WQIP is updated annually and the most recent version is available at the website provided in the comment.

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A8	39	In consideration of avoiding risk of accidental flooding of adjacent homes and businesses, provide information about safeguards in the project that would be in place if dams cannot be lowered due to mechanical malfunction or other reason.	The dams would not increase flood hazards in the region. They would be operated to deflate during high flow events. Operation and management of the facilities would be done in close coordination with OCDPW to ensure compatibility with flood protection objectives. As with all rubber dams in California, the rubber dams would deflate as an emergency feature.
A8	40	Page 2-1, Section 2.2 Project Location: a. Figure 2-1: Please identify/label Oso Creek in the map. 3rd sentence: Suggested text - "The headwaters of San Juan Creek and Arroyo Trabuco originate in the Cleveland National Forest near the county border of Orange and Riverside. The main stem San Juan Creek originates at an elevation... "	Comment noted. This change will be included in the Final EIR.
A8	41	Page 2-9, Rubber Dams and Associated Facilities, 3rd sentence: Please change "Orange County Department of Public Works (OCPW)" to "Orange County Flood Control District (OCFCD)".	Comment noted. This change will be included in the Final EIR.
A8	42	Figures 2-4a, 2-4b, and 2-4c: a. The San Juan Creek channel ROW belongs to OCFCD, not OCPW. Please revise labels corresponding to delineated ROW boundaries as appropriate. b. Please see also comment A. 1 above.	Comment noted. This change will be included in the Final EIR.
A8	43	Page 2-14: a. 1st paragraph, last sentence: Please correct typo - "been" instead of "by". b. 3rd paragraph, 2nd sentence: Please change "OCPW" to "OCFCD".	Comment noted. This change will be included in the Final EIR.
A8	44	It appears that Figures "5-2" and "5-3" should be labeled "2-5" and "2-6" respectively. Please verify and revise as appropriate.	Comment noted. This change will be included in the Final EIR.
A8	45	Page 2-23, Phase 1, 2 nd paragraph: Please define the acronym APM.	Comment noted. This change will be included in the Final EIR.
A8	46	Page 2-24 Subsequent Phases, 1st sentence: Please correct typo - "identical" instead of "identically"	Comment noted. This change will be included in the Final EIR.
A8	47	Page 2-25, Section 2.8 Discretionary Approvals Required for the Project, 6th bullet point: Please revise the text to read, "OCFCD (OCPW/County Property Permits), encroachment permit"	Comment noted. This change will be included in the Final EIR.
A8	48	Page 3.8-1, Surface Hydrology, 2nd sentence: Please revise the text to read "The San Juan Watershed is ... in the Cleveland National Forest to the east of the Pacific Ocean ... "	Comment noted. This change will be included in the Final EIR.

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A8	49	Page 3.8-4, Groundwater Levels and Flow, last paragraph: Please delete "of the capacity".	Comment noted. This change will be included in the Final EIR.
A8	50	Page 3.8-7, San Juan Basin 2016 Adaptive Pumping Management Plan, 3rd and 4th paragraphs: Well locations are not shown in Figure 3.8-3.	Comment noted. This change will be included in the Final EIR.
A8	51	Page 3.8-18, Orange County Department of Public Works Flood Control Encroachment Permit: a. Please delete "Control" in the heading. b. 1st sentence: Please insert "OCFCD or" before "county" c. 3rd sentence: Please revise the text to read "If the application is ... , it is routed to applicable County service areas for review such as Infrastructure Programs, Operations & Maintenance, Environmental Resources, etc." d. 4th sentence: Please change "departments" to "service areas".	Comment noted. This change will be included in the Final EIR.
A8	52	Page 4-17, Section 4.2 .8 Hydrology and Water Quality, 2 nd paragraph, 2 nd sentence: Please revise the text to read "This project involves ... from Stonehill Drive to La Novia Bridge and in Trabuco Creek from confluence with San Juan Creek to Ramon Street."	Comment noted. This change will be included in the Final EIR.
A8	53	1. Construction on OCFCD's San Juan Creek Phases 4, 5 and 6 Project is currently scheduled for completion in May 2019. 2. Text and graphics within the Program EIR should indicate that this is in OCFCD (Orange County Flood Control District) right-of-way, not in Orange County Public Works (OCPW) right-of-way. 3. Coordination is needed with OCPW to ensure that the grade at which the rubber dams are constructed is compatible with the equilibrium slope of the channel and the Invert Stabilization Project. 4. All dams and fish chutes will be operated and maintained by SMWD. 5. OCPW Operations & Maintenance may require access to control the deflation of the dams if needed. 6. If damages and fish chutes or operations damage any portion of the flood facility, SMWD will be responsible for repairs. 7. Future removal or replacement of all dams and fish cutes will be the responsibility of SMWD. 8. During construction, SMWD will need to allow for OCPW Operations & Maintenance emergency access. 9. Safety signs such as "Stay Out of Water" may be needed along with contact information.	1. Comment noted. The construction schedule for the installation of the rubber dams would occur after this schedule. 2. Comment noted. 3. As noted in Mitigation Measure HYDRO-1, SMWD would coordinate with the County to ensure the projects are coordinated and integrated. 4. SMWD concurs that the rubber dams and fish chutes would be operated and maintained by SMWD. 5. As operator of the project, SMWD would coordinate with OCPW Operations and Maintenance to ensure integrated management of the channel for water supply and flood control. 6. SMWD concurs that damages to the rubber dams and fishways would be repaired by SMWD. 7. SMWD concurs that removal and replacement of the rubber dams and fishways would be SMWD's responsibility. 8. As part of the agreement with OCPW, emergency access would be provided at all times to County Operations and Maintenance. 9. As noted on page 3.8-21, site control would be established and appropriate signage installed by SMWD.

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		<p>10. Is the study based on hydrologic expectation that account for climate change and sea level rise?</p> <p>11. Final height of rubber dams will be contingent on OCPW approval.</p>	<p>10. As described in Master Responses, climate change and sea level rise was accounted for in understanding impacts and in designing the facilities.</p> <p>11. As noted in Mitigation Measure HYDRO-1, SMWD would coordinate with OCPW to ensure rubber dam designs are compatible with flood control requirements pursuant to County approval.</p>
A8	54	If you have any questions regarding these comments, please contact Jenna Voss at (714) 955-0652 or Cindy Rivers at (714) 955-0674 in South Orange County Watershed Management Area; Ariel Corpuz at (714) 647-3966 or James Tyler at (714) 647-3966 in Flood Programs; Samantha Mackey at (714) 647-3974 or Edward Frondoso at (714) 245-4596 in Traffic & Design; or Ashley Brodkin at (714) 667-8854 in OC Development Services.	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.

Letter A9: Orange County Transportation Authority

A9	1	Thank you for providing the Orange County Transportation Authority (OCTA) with the Draft Program Environmental Impact Report (Draft PEIR) for the San Juan Watershed Project (Project). On June 30, 2017, OCTA provided comments on the Project's Notice of Preparation. OCTA appreciates Santa Margarita Water District's (SMWD) acknowledging receipt of the comments in the Draft PEIR.	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A9	2	After review of the Draft PEIR, it was difficult to locate responses to OCTA's previous questions/comments. OCTA's primary concern with the Project is that the proposed dams could potentially place additional stressors and impacts on the \$1.5 million OCTA-funded restoration project, located directly upstream (less than one mile) from the northernmost limits of the Project area. This project is funded through Measure M2 (M2), Orange County's half-cent transportation sales tax, and is tied to M2 freeway projects.	The proposed project would install rubber dams downstream of the OCTA project. The comment is unclear on what "stressors" would occur from implementation of the project. Chapter 4, Cumulative Analysis, evaluated the proposed project's contribution to cumulative impacts which could occur with surrounding past, present, and future projects. The DEIR concluded that the project's contribution to cumulative impacts would be less than significant with mitigation incorporated, as necessary. The proposed project would not significantly impact OCTA's restoration project. Furthermore, since the OCTA's restoration project is located upstream, the proposed project wouldn't substantially change the hydrologic conditions at the OCTA site and could even provide a benefit to the restoration efforts by raising the groundwater table, which would support the biological resources of the area. No changes were made to the DEIR in response to this comment.
A9	3	OCTA is concerned that the proposed dams could lead to increased water ponding and general changes in the natural hydrology. Although the Draft PEIR acknowledged there are sensitive native riparian vegetation communities in the Project area, and attempted to address some of OCTA's	As described on page 3.8-23 of the DEIR, groundwater extraction in the basin would continue to be regulated through the GWFMP. The minimum water level requirements currently in force would not be altered by the project. Therefore, the project would not negatively affect upstream habitat. Conversely, the project would serve to raise

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		<p>concerns under Section 3.3-2, there remains questions as to how the Project's potential impacts will be mitigated.</p> <p>They include:</p> <ul style="list-style-type: none"> • How can groundwater production associated with the Project be implemented in a way to not negatively affect upstream riparian habitat? 	groundwater levels.
A9	4	<ul style="list-style-type: none"> • What assurances can be provided for the San Juan Basin Authority's ongoing monitoring of riparian vegetation? The Draft PEIR stated monitoring is expected. • The type of monitoring conducted needs to be specified. • Who determines the thresholds for habitat impacts and what are the triggering mechanisms? How would the Project address negative impacts as a result of the monitoring efforts? 	No changes to SJBA's current commitments to monitor and maintain riparian habitat would occur as a result of the project. Adding water to the system is an attempt to increase groundwater levels. No additional groundwater modeling is suggested by the project, and no changes to the existing monitoring or "triggering mechanisms" are proposed.
A9	5	<ul style="list-style-type: none"> • Changes in the hydrology as a result of the Project could negatively affect OCTA's project, which may result in additional funds being expended. 	The project would not change the hydrology upstream since the dams would not affect any upstream flows. No impacts would occur to OCTA's project.
A9	6	<ul style="list-style-type: none"> • The slowing and ponding of water from the Project could attract non-native invasive aquatic species which may have a negative impact on the OCTA project. Will this also be monitored and will the species be eradicated? 	Operation of the dams would result in temporary impoundments upstream of each rubber dam. However, because of the short-lived nature of impounded water behind the dams, populations of invasive species are not expected to establish. Thus, Phase 1 of the proposed project is not anticipated to result in an impact related to establishment and proliferation of invasive predatory species. Future evaluations of the potential extent of invasive species establishment would be required to determine to full extent of potential invasive species impacts associated with subsequent phases of the proposed project. Generally, construction and maintenance activities within stream courses can result in the introduction and proliferation of nonnative plant species, which can have detrimental impacts on native ecosystems. Vegetation is controlled on an as-needed basis by OCPW within the entire stretch of San Juan Creek from the BSA downstream to the Pacific Ocean; thus, any introduction of nonnative species resulting from implementation of the proposed project would be addressed through existing vegetation management activities.
A9	7	<ul style="list-style-type: none"> • The statement "it is expected the ongoing monitoring of riparian vegetation would ensure groundwater production associated with the proposed project would be performed in a manner that is not detrimental to upstream riparian habitat" is vague. OCTA requests that a more direct and specific response be provided. 	No changes to SJBA's current commitments to monitor and maintain riparian habitat would occur as a result of the project. Adding water to the system is an attempt to increase groundwater levels. No additional groundwater modeling is suggested by the project, and no changes to the existing monitoring or "triggering mechanisms" are proposed.

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A9	8	We would like assurances that the Project will not impact OCTA's project. OCTA has a responsibility to meet success criteria in order to receive mitigation credits from the wildlife agencies. We would appreciate further coordination with SMWD to ensure appropriate steps are taken to avoid or minimize the Project's impacts on OCTA's project. If you have any questions or comments, please contact me at (714) 560-5907 or at dphu@octa.net.	SMWD appreciates the comments submitted by the OCTA on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR.
Letter A10: South Coast Water District			
A10	1	South Coast Water District (District) appreciates the opportunity to provide Santa Margarita Water District (SMWD) with comments on the Draft Program Environmental Impact Report (PEIR) for the San Juan Watershed Project (Project). The District is a 20-percent participant in the Project along with SMWD, and is a responsible agency for the Project. The District also appreciates recent expressions of support and potential partnership by SMWD on the District's Doheny Ocean Desalination Project	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A10	2	The Project would develop facilities to manage surface water resources to enhance groundwater resources of the San Juan Groundwater Basin. The Project would increase the capture and storage of urban runoff and stormwater, optimize the use of recycled water for beneficial use, minimize the potential for undesired impacts, and augment local groundwater supplies to reduce the region's dependence on imported water.	This comment provides a brief description of the project. This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A10	3	The District values its partnership with SMWD on the Project and appreciates the issues being addressed and the information provided in the PEIR, and has the following comments for SMWD's consideration:	SMWD appreciates the expressed value from the South Coast Water District. This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A10	4	Doheny Ocean Desalination Project: In the PEIR's discussion of the Doheny Ocean Desalination Project (p. 5-4), it would be appropriate to cite the various regional water supply feasibility studies, all of which identified the Doheny Ocean Desalination Project as a viable solution. The PEIR should discuss the recent findings of the District's Water Reliability Working Group, a diverse and independent community-led stakeholder group that ranked the Doheny Ocean Desalination Project above all other available water supply alternatives. Information on the Water Reliability Working Group is available at this web location https://www.scwd.org/about/governance/water reliability working group/default.htm .	The Doheny Ocean Desalination facility is recognized in Chapter 6 as an on-going effort that would not conflict with or replace the need for the proposed project. No additional qualification of the project's status is needed in this Draft EIR.

Letter No	Comment No	Comment	Response
A10	5	<p>Further, the District agrees that the South Orange County region warrants development of a diverse water supply portfolio and that both the San Juan Watershed Project and the Doheny Ocean Desalination Project could benefit the region's water supply reliability. The District requests that the PEIR's statement regarding the "uncertain implementation schedule and an uncertain cost of water delivery" be clarified, in that the Doheny Ocean Desalination Project does have an estimated project delivery schedule and estimated costs for water production. See,</p> <p>http://scwd.org/depts/engineering/projects/water-supply-projects/oceandesal3/default.htm.</p>	The Doheny Ocean Desalination facility is recognized in Chapter 6 as an on-going effort that would not conflict or replace the need for the proposed project. No additional qualification of the project's status is needed in this Draft EIR.
A10	6	<p>As noted, the District has formed the independent, stakeholder-driven Water Reliability Working Group to investigate and rank available local water supply reliability alternatives. The group concluded that "[a]s an individual project, Doheny Desal ranks 1st by high margins" when both system and supply reliability benefits are considered. See,</p> <p>http://www.scwd.org/services/drinking/supply/water-reliability/presentations.htm [Water Reliability Working Group Presentation 08-22-17]. The SCWD Water Reliability Study Technical Memorandum Report, published on December 21, 2017, also concluded that the overall ranking of the Doheny Ocean Desalination Project exceeded that of other available supplies.</p> <p>https://www.scwd.org/ciyicax/filebank/blobdload.aspx?blobid=8044.</p>	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A10	7	<p>South Coast Water District appreciates the opportunity to provide these comments on the PEIR, and looks forward to progressing with the environmental review for the Project, as it and SMWD work cooperatively to develop long-term water supply reliability for South Orange County. If you have any questions please do not hesitate to contact the undersigned (949-499-4555).</p>	SMWD appreciates the additional comments submitted by SCWD on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR.

Letter A11: South Orange County Wastewater Authority

A11	1	<p>Thank you for the opportunity to review and comment on the San Juan Watershed Project Draft Environmental Impact Report (EIR). Your document has very clearly defined a project which offers the potential to enhance local water resources. Our comments are separated between the Phase I Project-Level and the Subsequent Phase Program-Level.</p>	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A11	2	<p>Phase I Project-Level</p> <p>The extent of the Phase I Project which is largely devoted to the capture and recharge of storm water runoff does not impact the operations of the South Orange County Wastewater Authority (SOCWA). The project exists</p>	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.

Letter No	Comment No	Comment	Response
		within the Lower San Juan Basin which is covered by the Master Water Recycling Permit SOCWA holds. The Salt and Nutrient Management Plan, which is a requirement of the Water Recycling Permit, has a goal to "Continue and expand existing programs to desalt groundwater in the Lower San Juan Basin to increase local supply". SOCWA is in agreement that Phase 1 moves closer to achieve the goal and is consistent with the permit requirements for SOCWA. It is noted that Phase I might include modification of the City of San Juan Capistrano Groundwater Treatment Facility. This facility, as well as the South Coast Water District Groundwater Recovery Facility, has a Special Wastewater Discharge Permit administered by SOCWA which will be reviewed and modified as needed based on proposed design changes when or if they occur. In addition, brine discharged from the facility into San Juan Creek Ocean Outfall system is regulated through the SOCWA NPDES permit. Potential modifications to the groundwater treatment facilities should be reviewed for potential impacts to the permits. Therefore, our agency does not have comment on the Phase I Project.	
A11	3	Subsequent Phase Program-Level The Subsequent Phases of the project may involve the extension of the project to process and transfer recycled water for recharge into the San Juan Basin. The EIR identifies several SOCWA treatment facilities that might be used as a source for the recycle water. SOCWA has already done some conceptual planning for the improvements at two facilities that would be needed to create a source of recycled water for indirect potable reuse. Some of these modifications will generate a wide range of temporary and permanent impacts to be addressed in a future environmental planning document including GHG emissions, noise, aesthetics, traffic and air quality. For a Program-Level analysis it may simply be noted that treatment modifications would require a more detailed environmental analysis in a future document.	The DEIR notes on page 2-22 that implementation of Phase 2 would result in additional construction that could result in environmental impacts subject to additional CEQA assessment.
A11	4	If you have any questions regarding these comments please contact me at (949) 234- 5411 or bpeck@socwa.com.	SMWD appreciates the comments submitted by SOCWA on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR.
Letter A12: San Juan Basin Authority			
A12	1	Thank you for the opportunity to review Santa Margarita Water District's (SMWD's) San Juan Watershed Project Draft Program Environmental Impact Report. San Juan Basin Authority (SJBA) is a consortium of four local South Orange County water agencies operating collaboratively under a Joint	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.

Letter No	Comment No	Comment	Response
		<p>Exercise of Powers Agreement since 1971. One of those member agencies is SMWD, the project's Lead Agency relative to CEQA. SJBA manages the groundwater basin that extends along San Juan Creek and its tributaries, from the Santa Ana Mountains to the Pacific Ocean.</p> <p>The purpose of this letter is to provide comments on the subject DPEIR. As SJBA's Administrator, I have reviewed the DPEIR and have the following suggestions/comments relative to groundwater resources in the San Juan Basin</p>	
A12	2	<p>The DPEIR is well written and articulates well the potential environmental concerns and, where appropriate, mitigation to be implemented to reduce the impacts to a level of no significance. It is clear that SMWD and its consultants have spent a great deal of effort to address the issues with which SJBA would be concerned.</p>	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A12	3	<p>With that said, there are a few items deserving further discussion, and in some cases, further analysis.</p> <p>1. Rights to Additional Percolated Groundwater</p> <p>The DPEIR describes the Permits for Diversion and Use of Water held by SJBA and South Coast Water District (SCWD), along with current work performed by SJBA to monitor groundwater quality and quantity in the San Juan Creek watershed under those permits. The permits dictate how much groundwater can be pumped each year and under what conditions.</p> <p>The DPEIR correctly states that the groundwater pumpage allowed under either permit has not been fully exercised in recent years. The City of San Juan Capistrano has been the sole groundwater pumper under the SJBA permit and SCWD's permit is exclusively held by SCWD. Neither agency currently has the pumping/treatment capacity to do so in the near future. And, the permits were issued taking into consideration existing natural recharge conditions in the San Juan Basin (the underground streams underlying San Juan Creek and its tributaries), not any future enhanced recharge. So, the permits do not seem to address how enhanced percolation/storage would be allocated.</p>	The proposed project would not modify or assign future pumping rights or amounts. Rather, the project would be implemented to benefit the SJBA without imposing any additional limitations regarding water rights.
A12	4	<p>When the San Juan Watershed Project is in operation in the future, it is expected that additional storm water and recycled water will be percolated into the groundwater basin, above and beyond any current natural recharge volumes. While it is not strictly a subject for CEQA analysis, it is critical that SMWD work with SJBA, SCWD, and other groundwater rights holders in the Middle and Lower Basins to identify and agree to a method for allocating any "new" groundwater storage/production created by the Project.</p>	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.

Letter No	Comment No	Comment	Response
		This would allow compliance with the water rights permits to continue without potential impacts to water levels in the groundwater basin.	
A12	5	Impact No. 3.8-2 correctly asserts that the Project would likely increase the availability of groundwater to be produced, using the Adaptive Pumping Management (APM) plan to manage the basin. However, it does not mention how that increased availability would be allocated. Please describe in the DPEIR what tools or methods could be used to allow water rights holders to jointly determine how the enhanced storage/production will be allocated.	The proposed project would not modify or assign future pumping rights or amounts. Rather, the project would be implemented to benefit the SJBA without imposing any additional limitations regarding water rights. This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A12	6	<p>2. Bedrock High Investigation</p> <p>SJBA has contracted Wildermuth Environmental, Inc. to conduct an investigation to determine if a "bedrock high" exists perpendicularly across a portion or all of the Lower San Juan Creek Watershed, in the area just north of Stonehill Drive. A bedrock high is a subterranean geologic feature that can slow or block flow within subterranean streams like the San Juan Basin.</p> <p>Preliminary results have been obtained from the investigation in the time since the DPEIR was released. The study includes analysis of the data and maps and cross sections of the feature. Further, SJBA has approved a contract that would provide additional analysis to determine how such a feature, if documented, can affect the characterization of the San Juan Basin. However, WEI has not yet been given notice to proceed with that contract. Please describe in the PDraft PEIR how the results of the bedrock high investigation would be considered in the final design of the Project.</p>	The bedrock investigation mentioned in the comment is not a part of the project. Understanding the geology in the valley is important to determine best practices to access local groundwater resources for the benefit of the region. This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
A12	7	Again, thank you for the opportunity to comment on the Draft Program Environmental Impact Report for this important water supply project for South Orange County. Please let me know if there is any information you need from SJBA to complete your CEQA analysis and report.	SMWD appreciates the comments submitted by SJBA on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR
Letter A13: City of San Clemente			
A13	1	The City of San Clemente (City) appreciates the opportunity to review and provide comments on the Draft Environmental Impact Report (Draft PEIR) prepared for the proposed San Juan Watershed Project (Proposed Project) to be implemented by the Santa Margarita Water District (District).	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.

Letter No	Comment No	Comment	Response
A13	2	The City is located partially in, and directly south and adjacent to, the San Juan Watershed. The San Juan Watershed provides a significant source of coarse-grained, beach quality sediment for the City's beaches, which are located downcoast of the San Juan Creek discharge point at Doheny State Beach. There is a lack of beach sediment (net sediment deficit) within the Oceanside Littoral Cell and, as a result, the shorelines are generally in an eroded condition. Therefore, the City is concerned that any project that would have the potential to reduce the existing/historical sediment load to the beach could have an adverse effect on shorelines in the vicinity of the City.	An additional assessment of sediment transport has been conducted and included in Appendix E. The project would not reduce the sediment load reaching the Doheny State Beach. Some sediment would be detained temporarily behind the rubber dams when they are raised. This sediment would be conveyed downstream during high flow events similar to existing conditions. See Master Response: Sediment Transport
A13	3	Moreover, in the future as sea level rises, maintaining wide sandy beaches will become a key component of the City's sea-level rise adaptation strategy. Since the sandy beach functions as a natural buffer between the ocean waves and upland areas, the City cannot support any project that would reduce the availability of beach quality sediment (sand) reaching the coast now or in the future.	The project would not reduce sediment transport to the beach, and would not contribute to seal level rise vulnerability. See Master Response: Sediment Transport
A13	4	The Draft PEIR states " ... three rubber dams within San Juan Creek would act as in-stream detention facilities for both dry weather and wet weather flows within San Juan Creek and Arroyo Trabuco. The dams would promote instream recharge of the groundwater basin by allowing for the ponded water to naturally infiltrate into the stream bed." To the extent that the proposed project affects surface water flows from San Juan Creek, sediment that would otherwise reach the beach would be retained upstream behind the dams and would be prevented from naturally reaching the beach. Maintenance activities for the proposed rubber dams are described on Page 2-24 of the Draft PEIR. The second sentence of the paragraph describing Phase I maintenance activities states, "Maintenance activities in and around the rubber dam structures would include periodic, as-needed removal of accumulated sediment and debris, inspection and replacement of the riprap scour protection, and inspection and maintenance of all concrete structures." With respect to this sediment removal maintenance activity there is no information presented regarding the frequency and/or volume of sediment that is expected to be removed nor is there any information regarding where the sediment would be taken to for beneficial use and/or disposal (for any fine grained material too small in size to be considered beach quality sediment). In addition, there is no information presented regarding the sandy portion of accumulated sediment that, if transported to the ocean, would nourish the region's beaches.	Some sediment would be detained temporarily behind the rubber dams when they are raised. No sediment would be removed from the system. This sediment would be conveyed downstream during high flow events similar to existing conditions. See Master Response: Sediment Transport

Letter No	Comment No	Comment	Response
A13	5	After reviewing the Draft PEIR for the Proposed Project, it does not appear the potential effects at the mouth of San Juan Creek relative to reductions in sediment deposition and increased shoreline erosion have been evaluated. Therefore, it is unclear what effect this potential project will have on reducing the volume of sediment reaching the coast. An analysis of this potentially significant impact must be included in the EIR.	Some sediment would be detained temporarily behind the rubber dams when they are raised. This sediment would be conveyed downstream during high flow events similar to existing conditions. See Master Response: Sediment Transport
A13	6	Specifically, the City is requesting that an analysis be conducted to determine the impact of sediment removal on the natural transport of sediment to the beach with a specific focus on the sandy portion of this sediment. This analysis should be included in the EIR as part of the CEQA Appendix G Thresholds checklist section addressing impacts to Geology, Soils, and Seismicity as the sand represents "a known mineral resource that would be of value to the region and the residents of the state. This analysis should include estimates of the volume of sediment that would be removed from the creek by the project, the portion of this sediment that is sand, and the frequency of this sand removal. This information should be used to estimate the impact of the project on the volume and rate of sediment (sand) delivery to the shoreline at the ocean mouth of the San Juan Creek. If the impact is determined to be significant then measures should be developed to mitigate the impact. Such mitigation measures could include continued transport of accumulated sediment via natural creek flows, transport of removed sediment to the creek mouth or targeted beaches, and/or funding for beach nourishment activities along the impacted shoreline.	An additional assessment of sediment transport has been conducted and included in Appendix E. The analysis concludes that some sediment would be detained behind the dams temporarily. However, the analysis confirms that this sediment would be subject to transport during large storm events when the dams are lowered. See Master Response: Sediment Transport
A13	7	Thank you in advance for your consideration of the City's request to include this additional project impact analysis in the EIR. Please call me with any questions at 949-361-6196.	SMWD appreciates the comments submitted by the City of San Clemente on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR

Letter B1: California Cultural Resources Preservation Alliance

B1	1	Thank you for the opportunity to comment on the above-mentioned project. As indicated in the cultural resources section of the document, the proposed project area is located within an area of known archaeological sensitivity. During pre-contact times, Juaneno/Acjachemen villages are known to have been located along streams and especially at the confluence of two streams, where a potential staging area and control building are proposed (Cultural Resources Appendix, pg. 39). Although this area has been developed for a park and bike/pedestrian paths, there is a high potential for the presence of buried archaeological resources. Buried archaeological materials may also be present throughout the proposed	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
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Letter No	Comment No	Comment	Response
		Area of Potential Effect (APE), therefore, we strongly support the Cultural Resources Mitigation Measures calling for monitoring by a qualified archaeologist and Native American during all ground disturbing. We support all the other Cultural Resources Mitigation Measures.	
B1	2	Please include the mitigation measures regarding compliance with PRC Section 5097.98 and Health and Safety Code Section 7050.5 in 3.4-4, pg. ES-11 of the Cultural Resources Mitigation Measures and Pg. 3.4-24. They erroneously say, "None required". We also have concerns regarding the lack of information regarding the construction of pipelines associated with the Phase I construction of three masonry control buildings.	Compliance with regulations is not mitigation. The regulations cited would apply to any discoveries. No additional mitigation is required to ensure a less than significant effect.
B1	3	Finally, pending the inclusion of the mitigation measures regarding human remains, we strongly support and commend ESA for the well formulated cultural resources mitigation measures, especially the statement within CUL-4, pg. ES-9, that avoidance and preservation in place shall be the preferred manner of preservation.	SMWD appreciates the comments submitted by the California Cultural Resources Preservation Alliance on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR

Letter B2: California Trout

B2	1	<p>The Santa Margarita Water District (SMWD), in conjunction with South Coast Water District (SCWD), is proposing to implement a multi-phase San Juan Watershed Project (Project) that would develop facilities to manage surface water resources to enhance groundwater resources of the San Juan Basin. The first phase includes installation of three rubber dams within San Juan Creek Creek to enhance in-stream groundwater recharge with captured stormwater. The San Juan Creek Watershed is located primarily within Orange County and covers 176 square miles and has a stream length of 29 miles (San Juan Creek Watershed Workplan 2013). Its major tributary is Trabuco Creek, which covers 54 square miles and extends 23 miles into the rugged Santa Ana mountains in the Cleveland National Forest.</p> <p>California Trout fully supports projects that enhance the environmental quality of the San Juan Creek watershed and provide for integrated water management. This letter presents comments regarding scope and content of project information being presented for evaluation of impact to environmental resources in the Draft Program Environmental Impact Report (EIR). Our comments focus primarily on the Project's potential negative impact on endangered Southern California steelhead and other native aquatic species in the San Juan Creek watershed. These comments are informed by technical experts in the field.</p>	<p>This comment does not address the adequacy or accuracy of the DEIR. No further response is required.</p>
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Letter No	Comment No	Comment	Response
B2	2	1. The Draft Program EIR (DPEIR) does not adequately document or evaluate project-specific or cumulative impacts associated with other relevant projects in the San Juan Creek Watershed of which Santa Margarita Water District is aware. These documented projects are in design and/or implementation stage. In accordance with CEQA, the PEIR must consider reasonably foreseeable projects. These reasonably foreseeable projects include Orange County Flood Control District's invert stabilization project in lower San Juan Creek and Trabuco Creek; OCTA's Metrolink bridge replacement project just upstream of the confluence of San Juan and Trabuco Creeks; CalTrout and Trout Unlimited's Metrolink and Interstate-5 Trabuco endangered steelhead fish passage projects in design stage; United States Forest Service's check dam removal and fish passage enhancement activities in upper San Juan and Trabuco Creeks; San Juan Basin's Alternative 6 saltwater intrusion barrier operation, and South Orange County's Water Quality Improvement Plan. Clearly addressing the relationship of San Juan Watershed Project with these projects in terms of environmental impact will provide a more adequate representation of Project impact and mitigation actions required.	The DEIR does identify the projects identified in the comment in Table 4-2. The DEIR notes on page 4-13 that implementation of these projects will improve steelhead migratory habitat values of the stream system.
B2	3	2. The DPEIR Project Objectives do not include water resource management objectives relative to ecosystem and natural resource management. Endangered steelhead habitat and passage objectives should be addressed in parallel to the design objectives in the PEIR Project Objectives.	The DEIR lists the project objectives and includes the implementation of groundwater management practices in an environmentally responsible manner. As described in chapter 3.3 of the DEIR, SMWD would implement mitigation measure to ensure project impacts to biological values are mitigated in coordination with the wildlife agencies.
B2	4	3. The rubber dams are acknowledged to be fish migration barriers without some form of mitigation. The DPEIR states that "each of the proposed rubber dams would be designed to include a fishway (i.e., fish ladder or other effective means of removing the dam itself as an impediment). Fishways will be designed in consultation with NMFS and in accordance with published design criteria and guidelines (NMFS 2008)." This does not represent an adequate understanding of the regulatory process to minimize environmental impacts, particularly the engineering and design rigor in protecting the anadromous life history form of salmonids.	The DEIR identifies NMFS and USFWS as Responsible Agencies of the project. Approvals from these agencies would be necessary to implement the proposed project. The proposed project would be designed to maintain fish passage. Furthermore, the current condition of the creeks does not support any fish migration due to in stream impediments further upstream. The proposed project would provide for fish passage and would provide assistance to in-stream impediment removal (BIO-5) as a contribution to convert the existing condition to a viable steelhead migratory channel in the future. See Master Response: Steelhead Recovery
B2	5	Moreover, the DPEIR conceptual designs are not of sufficient detail to evaluate their effectiveness in supporting passage of juvenile and adult steelhead as well as outmigration of smolts. For example, fish passage design criteria should be developed that include low and high fish passage design flows, hydraulic criteria for the fishways, hydraulic criteria for the tailwater and headwater conditions, and attraction flow criteria. The design	The DEIR identifies NMFS and USFWS as Responsible Agencies. Final designs of the fishways is required prior to obtaining permit approvals from the regulators. However, CEQA requires that potential impacts be identified, the significance determined, and mitigation developed where feasible. The DEIR complies with CEQA in identifying impacts, significance, and mitigation. The level of detail

Letter No	Comment No	Comment	Response
		flow range for passage should be defined and related to expected percolation losses and fishway operating flows. The relationship of the fishway exit (upstream end) to the stream bed and the dam crest is an important design consideration but is not provided in the DPEIR.	requested in the comment on the fishway design is more appropriate in permitting documentation.
B2	6	The profile of the fishway should be coordinated with the expected difference in headwater and tailwater elevations across a fish passage design flow range. The profile in the conceptual drawings appears to have a drop of only about 4 feet (2.5% for 146 feet) compared to expected water surface differences on the order of nine feet. Alternatively, the typical pool geometry shows a slope of 10%, which would produce an excessive drop of 14.6 feet.	The fishway concepts shown in the DEIR are initial designs. These designs will be more detailed as permitting requirements are applied. The level of detail requested in the comment on the fishway design is more appropriate in permitting documentation.
B2	7	BIO-5 in the DPEIR states that "The Santa Margarita Water District shall coordinate with NMFS and OCPW to participate in steelhead habitat restoration priorities within the San Juan Creek watershed. Participation may include implementation of in-channel fish passage improvements within San Juan Creek and mutually agreed upon funding and/or planning assistance commensurate with SMWD's level of effect to assist the resource agencies with the Steelhead Core 1 Recovery Population goals." The DPEIR conclusion of Significance Determination: Less than significant with mitigation is unsubstantiated. This statement is vague and cannot reasonably be used to identify and quantify what impacts are being mitigated.	Currently, there is no viable steelhead population within the system and no viable migratory habitat due to passage impediments among other reasons. The impacts identified in the DEIR to a future condition where steelhead utilize the stream are speculative. The DEIR attempts to quantify the effects to migratory days through a fish passage model. This model is speculative since the system exhibits extreme variability, and future hydrology may not be similar to historic conditions. The DEIR concludes that impacts to fish passage would be less than significant to the baseline condition. However, to minimize impacts in the future and to assist with permitting requirements the DEIR includes Mitigation Measure BIO-5 that commits SMWD to contributing meaningfully to the restoration of the steelhead fishery in the creek. Implementation of BIO-5 would reduce already less than significant impacts by requiring coordinated efforts with the OCPW and NMFS. In recognition of the variability in the system and the difficulties in precisely quantifying project impacts on a speculative future, Mitigation Measure BIO-5 commits SMWD to contributing funding and project implementation for removing the existing impediments in the stream that make the system entirely inaccessible to steelhead. In this way, with assistance from SMWD, San Juan Creek would be enhanced compared to existing conditions. The commitment to participate in a meaningful way presents a benefit that would not occur otherwise without the project. The details of the contribution would be determined by NMFS, USFWS, OCDPW, and the USACE. The project would not be permitted without the agreement of these agencies, working to enhance habitat values.

Letter No	Comment No	Comment	Response
B2	8	Moreover, Mitigation Measure Bio-5 has an objective of increasing passage days over existing conditions. This presumably could be at least partially accomplished with channel modifications to lower the minimum flows needed for passage. The accurate establishment of existing passable flow thresholds is important to establish baseline conditions for this mitigation measure and to inform the design of passage facilities at the dams and link to verification of actual passage flow thresholds in the field (rather than relying solely on the hydraulic models).	Mitigation Measure BIO-5 includes in-channel improvements as part of the mitigation strategy. The channel is constantly changing, making baseline conditions subject to constant change. Nonetheless, the model provides a typical snapshot that identifies typical channel forms that may occur at any time within any portion of the channel.
B2	9	The DPEIR states that, "Up to nine additional rubber dams would be constructed within San Juan Creek and/or Arroyo Trabuco during subsequent phases of the proposed project. The additional rubber dams would be similar in design as described above for Phase I rubber dams. The locations of the additional rubber dam facilities are not known at this time." This ambiguity impairs assessment of potential impacts to aquatic organism mobility, riparian vegetation, or other environmental components. Further detail of the dams' configuration, location, and effects on groundwater and stream flow is needed. The PEIR should address these project details and impacts.	Future locations of rubber dams is speculative. The DEIR identifies these features in a programmatic fashion. This is appropriate to recognize that additional study would be required prior to implementation of Phase 2.
B2	10	6. The DPEIR states that, "Phase I rubber dam construction is anticipated to require approximately 250 days total, beginning in early 2018 and ending in early 2019. Since San Juan Creek and Arroyo Trabuco are active drainage channels, the channel portion of construction would be performed outside the rainy season between the months of April and October to avoid potential impacts to water quality. Rubber dam construction is anticipated to require approximately 10 construction workers per dam." The Best Management Practices (BMPs) for rubber dam implementation and more generally other impact minimization and avoidance measures need to be clearly described, typically as part of the project description, to facilitate adequate environmental analysis.	The construction methods for the project are described in the Project Description. Best management practices for stormwater quality management would be determined within the SWPPP.
B2	11	7. The DPEIR states that, "The APM would provide annual guidance on the management of groundwater production within the San Juan basin in order to comply with the water rights permits held by the SBJA and SCWD. The APM would allow the SBJA and SCWD to assess annual groundwater production and manage storage within the basin as well as prevent seawater intrusion and maintain groundwater levels which are protective of riparian vegetation." There is no mention of minimum instream flows that are protective of fish and the aquatic ecosystem, nor the effects of groundwater on surface flow.	The proposed project would not change the existing APM's authority to regulate groundwater extraction.

Letter No	Comment No	Comment	Response
B2	12	8. In the DPEIR Appendix D Biological Technical Report, the Fish Passage Assessment states that "Unlike Trabuco Creek these are not discrete barriers associated with grade control structures or other impediments; the barriers are created by the shallow dimensions of the naturally-formed low flow channel." The fish migration assessment uses long-term hydrologic simulation, breach analysis, and stream hydraulics to assess migration windows for the project area. This type of analysis is valuable. However, the Wildermuth Environmental hydrologic model is mentioned in the report, but no details are provided on model development or calibration, and a specific reference is not included. The model is fundamental to the determination of passage windows, and a copy of the model or the reporting associated with it should be made available for review to understand this basis.	The WEI model is based on the OCPW HEC-RAS model used to estimate flood risk in the watershed. WEI has taken this model and added the rubber dams at the proposed locations to simulate detention and overtopping over a 45-year period of historic hydrology. The model provides an estimate for flow impacts that will be used to finalize fishway designs. SMWD will coordinate with California Trout and regulators to ensure that the model is accurate and that fishway designs are effective. The model outputs are described in Appendix C and Appendix E.
B2	13	9. Mitigation Measure Bio-1 requires development of a Fish Rescue and Relocation Plan to reduce impacts on steelhead and arroyo chub both during construction and in normal operations of the dams. The dams will be in operation frequently and for long durations during the steelhead migration season.	Mitigation Measure BIO-1 has been modified to include operational rescue and relocation. See Master Response: Steelhead Recovery
B2	14	This measure should be effective for construction impacts but the practicality of this approach during normal operations should be assessed by fisheries biologists, including the resources required and the ability to identify and rescue fish in inundated and potentially turbid conditions. The operation of the dams could rapidly change flow rates in the channel. An assessment of stranding potential associated with project operation should be used to consider the need for criteria for flow ramping. These criteria could potentially affect project yield and the simulated flows in the hydrologic model used for the passage assessment.	Mitigation Measure BIO-1 has been modified to include operational rescue and relocation. See Master Response: Steelhead Recovery
B2	15	10. The DPEIR should provide visual renderings of before/after rubber dam installation in the creek. The aesthetics and visual impacts analysis is lacking analysis.	The DEIR provides images of typical rubber dams to assist in visualizing impacts. Renderings would not greatly improve the understanding of the effect. The dams will be visible from the channel sides, but otherwise would be hard to see.
B2	16	11. The DPEIR should identify the approval/permits required and how ESA, CESA, and other regulatory and other approvals such as TMDL compliance will be achieved.	The project would not affect the creeks TMDL requirements. The authority of CESA and ESA is described in Chapter 3.3.
B2	17	12. The PEIR Fish Passage Assessment states that, "Under with-project conditions steelhead migration between the ocean and the upstream inundation limit on Trabuco Creek is possible 8.1 days per year on average (a 0.6 day/year or 8% reduction from baseline conditions), with migration between the ocean and San Juan Creek possible 8.4 days per year (a 0.7 day/year or 8% reduction). The reduction in passage days is mostly due to	The characterization of the existing constrained conditions and the project's effects is accurate.

Letter No	Comment No	Comment	Response
		a reduction in days when the creek has sufficient water depth, with the reduction in lagoon openings playing a smaller role. In 53% of years the proposed project would not change the number of passable days, in 34% of years there would be one fewer passable day, in 13% of years 2 fewer days, and in 1% of years four fewer days. There were three years (1951, 1999 and 2013) when the project condition resulted in the complete loss of migration days in a year that would otherwise have had one migration day. Overall, the results suggest that steelhead migration in San Juan Creek is very constrained under existing conditions, and will be slightly adversely affected by the proposed dams, provided that the dams are themselves passable.	
B2	18	13. The DPEIR does not address a number of comments submitted during the NOP response period relating to environmental impact. In accordance with CEQA, the DPEIR must adequately address comments. For example, elements of CDFW comment #5, NMFS comment #2, City of San Juan Capistrano comment #8, Orange County Public Works comment #10, California Trout comment #15, Trout Unlimited comment #17, and U.S. Fish and Wildlife Service comment #3 were not addressed in the DPEIR.	The NOP comments were included in Appendix A of the Draft EIR. CEQA does not require formal responses to NOP comments. The Draft EIR includes a detailed analysis on impacts to biological resources which is the focus of the identified letters.
B2	19	We appreciate the opportunity to submit these comments in response to the Draft Program Environmental Impact Report for the San Juan Watershed Project.	SMWD appreciates the comments submitted by California Trout on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR.
Letter B3: Orange County Coastkeeper			
B3	1	Orange County Coastkeeper ("Coastkeeper") is a nonprofit clean water organization with the mission to protect and promote sustainable water resources that are swimmable, drinkable, fishable and sustainable. The Sierra Club has the mission to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth's ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives.	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
B3	2	After reviewing the Draft Environmental Impact Report for the San Juan Watershed project, we have the following comments: 1. Our organizations strongly support the beneficial uses of San Juan, Trabuco and Oso Creeks as defined by the San Diego Regional Water Board. These uses include agricultural and municipal supply, recreation, and warm and cold water wildlife habitat. While the creeks serve multiple purposes, including flood control, that function should not discount their ecological functions and values. The EIR needs to do a better job of describing how the project will improve the function of these creeks to	The purpose of the project is to augment local water supplies through recharging stormwater into the groundwater basin. Recharge within the creek beds is a natural function that will elevate groundwater levels compared to existing conditions which will support the on-going maintenance of riparian habitat that currently exists upstream from the proposed project. The project is not designed to improve habitat values of the creek. However, Mitigation Measure BIO-4 requires that SMWD restore impacted creek bed at a 1:1 ratio.

Letter No	Comment No	Comment	Response
support these beneficial uses not just maintain current degraded conditions.			
B3	3	2. Section 3.8 Hydrology at page 3.8-21 states "Recharge into the groundwater basin would eliminate pathogen concentrations, since underground formations act as natural filters to remove many physical, biological and chemical pollutants from water as it moves through the soil". The EIR should discuss how the project will deal with upstream illicit dry weather runoff inputs and stormwater pollution discharges. This discussion should include confirmation that this project is not a pollution BMP and will not provide regulatory relief to upstream agencies to meet all water requirements at their discharge sites. This project should not be seen as an excuse to neglect water quality above the project area.	As noted on page 3.8-21, the quality of urban runoff and stormwater would be similar to existing conditions. Recharging runoff into the ground would reduce contaminant loads of the stormwater, using the shallow soils as filters. Anaerobic conditions in the groundwater basin eliminates pathogen contamination. The project would in effect increase stormwater quality. The RWQCB would determine BMPs applicable to the MS4 Permit.
B3	4	3. The section of the creek within the project area has been highly modified for flood control purposes, with a resulting loss of instream and riparian habitat. A priority for our organizations is functioning stream ecosystems and this project presents the opportunity to restore stream and riparian habitat in the Phase 1 project area. In section 3.1 Aesthetics, there is a discussion of mitigation for potential trash graffiti and vandalism. Section 3.3 Biological impacts discusses mitigation for 2.2 acres of habitat in the Phase 1 project area. The project should include creek restoration such as roosting trees along the creek above the banks and low lying native vegetation in the channel as mitigation for aesthetic and environmental impacts. Contributing funds to a mitigation bank for offsite mitigation should be avoided.	Mitigation Measure BIO-4 provides for 1:1 compensation of creek bed that could be achieved through off site or on site improvements. SMWD would coordinate with OCDPW to evaluate in-stream enhancement opportunities. However, any enhancement would need to ensure that the flood control capacity was not adversely affected.
B3	5	4. While Arroyo Toads were not observed in the Biological Survey Area, Arroyo Toad habitat does occur in the larger program-level area covered by the EIR. The EIR should include specific information on the potential impacts to the Arroyo Toad and its habitat. It should also include a discussion on potential mitigation for these impacts.	The DEIR concludes in Table 3.3-1 that the potential for arroyo toad in the project is low. Figure 3.3-1 identifies upstream arroyo toad habitat. The DEIR concludes that the project would not likely impact toad and no mitigation is required.
B3	6	5. Redirecting storm water and urban runoff to flow into the groundwater reservoirs may cause de-watering of the area below the project area. The discussion in section 3.8-3 on page 3.8-24 should include detail on how much de-watering may happen below the project area and what the affects may be on biological resources, geology and air quality (e.g. cause drying of the earth and dust in the air), and surrounding water sources.	Recharging the groundwater will not dewater areas below the dams. Rather, recharge in the project area will augment sub-surface flows into areas lower in the watershed including the lagoon.

Letter No	Comment No	Comment	Response
B3	7	6. Recycled water that "meets state regulations" is mentioned as a potential input to the creek for infiltration. It is critical that this recycled water match or exceed the quality of the ambient creek water in order to protect wildlife and avoid backsliding on water quality in the creek. Thank you for your consideration of our views.	SMWD appreciates the comments submitted by the Orange County Coastkeeper on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR.

Comments Received From Individuals during the Draft EIR Comment Period**Letter C1: Mike & Susan Thompson, Bill & Linda Lane, Tracy & Ann Lewis, Phyllis Tucker, Gerhard & Lynn Jurinek, Mark & Paula Torrianni**

C1	1	This letter is a follow up from myself and my immediate neighbors regarding the draft EIR for the San Juan Watershed Project. We are residents along Via Del Rey near the intersection of Via Del Amo Street in San Juan Capistrano adjacent to San Juan Creek. Our concerns are mainly with dam #2 and the positioning of the associated control station facility adjacent to the residential community along the West side of San Juan Creek. In our opinion it will create both an acoustic and visual nuisance which is of great concern. The following are some comments concerning our objections and possible solutions to the situation.	The DEIR evaluates construction noise impacts and identifies mitigation measures to minimize the effects. These short term construction effects would be consistent with the local noise ordinance.
C1	2	According to the site plan for dam #2, the control station will be placed directly adjacent to the retaining wall behind our properties. This creates two problems: 1) Excessive noise when the control station is in operation. It is our understanding this facility will operate at all hours of the day and night whenever necessary. We would like to point out that when the compressor and associated equipment are operating the projected noise output is approximately 75 decibels. The City of San Juan Capistrano code allows 65db from 7am to 7pm, 55db from 7pm to 10pm and 45db from 10am to 7am in residential areas. Clearly this decibel level is in violation of city code, especially at night.	The DEIR evaluates operational noise impacts and notes that maintenance activities would be consistent with local noise ordinances. The control stations would be equipped with acoustical design features that would prevent increases in ambient noise levels at surrounding receptors above levels prescribed in the noise ordinance.
C1	3	2) The structure containing the control station equipment WILL also impact scenic vistas. After looking at the plans in the Draft PEIR we see no reason for this structure to be as large as it is. I am personally familiar with the type of equipment involved and there is no reason for this building to have the large footprint as described, especially the height of 12 feet which is almost 1 1/2 stories tall!	The control station will be sized as needed to accommodate the control station. SMWD appreciates the comment that the size of the building needs to be sized appropriately. Final designs of the control stations will be sized appropriately, and provided with architectural characteristics to avoid adversely impacting the character of the neighborhood.

Letter No	Comment No	Comment	Response
C1	4	3) The proposed Draft PEIR indicates the control stations for dam's 1 and 3 be located on the East side of San Juan Creek adjacent to the industrial park and control station 2 for dam #2 to be located on the West side adjacent to single family residential homes.	This comment does not address the adequacy or accuracy of the DEIR. No further response is required.
C1	5	Possible Solutions 1) Move the control station for dam #2 to the East side of the creek in the industrial park. This seems like the easiest solution.	SMWD appreciates the suggested site relocation and will evaluate the possibility.
C1	6	2) Move the control station for dam #2 to the South about 300 yards to a large open area near an RV storage yard and a tennis court where it would have minimal impact on residents. We will include a picture of the area we are referring to.	SMWD appreciates the suggested site relocation and will evaluate the possibility.
C1	7	In talking to the gentlemen present from the Santa Margarita Water Authority at the scoping meeting on Jan 30, 2018, they stated that there were no concerns with the distance of the air-lines between the dam and the control stations. In fact, Mr. Bunts told us at the meeting that they maybe could run all three dams from One control station. We were able to speak with Mr. Ferons and Mr. Bunts from the Santa Margarita Water District at length after the Scoping Meeting. They both seemed receptive to addressing our concerns and we spoke about all the problems and solutions listed above. Another member of their team, whose name I did not get, asked for my contact information and said he would be in touch with me and come down to look at the proposed new location, but to date I have not heard from him. So, these are our concerns with this project and we hope you will consider options prior to finalization of the EIR.	SMWD appreciates the comments submitted by Mike & Susan Thompson and neighbors on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR.

Letter C2:Richard Gardner

C2	1	I am making these comments as an individual but I have made similar comments in the public meetings of the San Juan Basin Authority. As a member of Trout Unlimited, I will include comments regarding the Steelhead Restoration plan that was prepared several years ago under a separate letter.	This comment does not address the adequacy or accuracy of the DEIR. No further comment is required.
C2	2	The following items are meant to address physical features and concerns regarding the purpose or intentions of the dams in the creek. 1. The use of rubber dams to capture and hold water in the creek is an option that is premature for reasons that are described in the EIR. The basin is an underground flowing stream. Most of the time the creek is dry and the subterranean flows continue to move toward the ocean. If rain could be captured behind the rubber dam, it would percolate and resurface	This comment does not address the adequacy or accuracy of the DEIR. No further comment is required.

Letter No	Comment No	Comment	Response
downstream of the dam. In this way water would move toward the ocean.			
C2 3	2. If the first dam (downstream) provided additional groundwater recharge, this water would be downstream of the wells that provide water to the San Juan desalter. This recharge may have a little effect on the seawater infiltration that occurs when the SCWD well is operated during a drought.	The proposed project would augment groundwater recharge within the City of San Juan Capistrano. The project is not expressly intended to reverse seawater intrusion.	
C2 4	3. The analysis of the basin and the infiltration flows is insufficient since it doesn't include the pumping by other independent pumpers.	The Phase 1 project does not include any additional pumping. Rather, the project would only increase groundwater levels. Pumping by others would continue to occur as under existing conditions.	
C2 5	4. The San Juan Creek has changed from time to time including large amounts of sediment and at other times far less sand. The invert elevation may change 5 feet resulting in significant differences to the performance of the inflatable dams. If sediment is trapped behind the dams, considerable effort may be required to move sediment to provide accretion to the Capistrano Beach.	The rubber dams would not reduce the sediment load in the creek. See Master Response Sediment Transport.	
C2 6	5. Recent information indicates that the sheet piles installed along the San Juan Creek may significantly reduce recharge to the basin. The existing analysis of the San Juan Watershed Project performance should be expanded to consider the effects of the sheet piles.	The DEIR acknowledges on page 2-14 that the OCDPW has installed sheet piles along the edges of the channel and may remove the existing concrete slabs in the future. The project design accommodates this potential future condition to ensure that the dams are compatible with OCDPW flood control requirements.	
C2 7	6. The EIR does not consider how the rubber dams will attach to the sheet piles. The analysis should evaluate the forces on the piles. The transition of the concrete trapezoidal channel to the dam anchors and back to concrete channel could have significant effects on the fluid dynamics under high flow conditions.	Figures 2-5 and 2-6 of the Project Description identifies how the rubber dams would attach to the edge of the channel where the sheet piles have been installed.	
C2 8	Additionally, it is expected that the creek bottom downstream of the dam could be significantly eroded causing damage or undercutting of the 4" concrete channel. Furthermore, if panels of concrete are broken free as they have several times in the past, damage could occur to downstream portions of the creek, bridges, or other dams.	SMWD would coordinate with OCDPW to ensure the rubber dam designs are compatible with existing and future flood protection functions.	
C2 9	The EIR mentions that 3 of the 4 San Juan Basin Authority members will be participants in the Watershed project. It does not explain why SMWD would participate in this project since it does not have an interest in the groundwater treatment plants. Similarly, if additional water is provided and is available, why would MNWD not wish to partner in this project? If this project is viable then a rigorous financial analysis should be conducted considering the cost of water for the participants and the cost of water from the various sources so that an equitable sharing of the water and costs can	The proposed project is designed for regional water supply benefits, augmenting local water supplies to diminish reliance on imported water. The Project Description includes a summary of the ownership and proposed management of the project. This comment does not address the adequacy or accuracy of the DEIR. No further comment is required.	

Letter No	Comment No	Comment	Response
be fully vetted.			
C2	10	Thank you for considering these brief comments	SMWD appreciates the comments submitted by Mr. Gardner on the DEIR. SMWD will take into consideration these comments prior to making a decision on the Proposed Project and Final PEIR.



CHAPTER 13

Corrections and Additions to the Draft SEIR

This chapter contains a compilation of revisions made to the text of the Draft Program Environmental Impact Report (EIR) by the Santa Margarita Water District (SMWD) as the Lead Agency, in response to the comments received during the 45-day public review period for the San Juan Watershed Project. All revisions are previously introduced in Chapter 11 of this Final Program EIR but are summarized here for convenience of the reader. Where the responses indicate additions or deletions to the text of the Draft PEIR, additions are indicated in underline and deletions in ~~strikeout~~.

Chapter 2 Project Description

- Page 2-1 Figure 2-1 has been revised to identify and label Oso Creek on the map.
- Page 2-1 The headwaters of San Juan Creek and Arroyo Trabuco originate in the Cleveland National Forest near the county border of Orange and Riverside. The main stem of San Juan Creek originates at an elevation of approximately 3,330 feet above sea level, and flow approximately 29 miles south-southwest to the Pacific Ocean at Doheny State Beach in the city of Dana Point.
- Page 2-9 Phase I of the proposed project would include installation of three rubber dams within San Juan Creek to provide in-stream groundwater recharge of stormwater that would otherwise flow to the ocean (Figure 2-2). Rubber Dam No. 1 would be located within the city of Dana Point, while Rubber Dam No. 2 and No. 3 would be located within the city of San Juan Capistrano. All rubber dams would be located within an ~~Orange County Department of Public Works (OCPW)~~ Orange County Flood Control District (OCFCD) right-of-way.
- Page 2-11 Figures 2-4a, 2-4b, 2-4c have been revised to delineate right-of-way boundaries as belonging to OCFCD, not OCPW.
- Page 2-14 Where steel sheet pile walls have not by been installed, vertical concrete wall structures approximately 400 feet in length would be constructed on each side of the rubber dams; these vertical walls would replace the existing trapezoidal channel walls at the proposed dam locations.
- Page 2-14 Each dam would also include a masonry control building that would house equipment for telemetry, dam inflation and deflation logic controllers,

surveillance, and an air compressor system that will be used to inflate the rubber dams. The control buildings are proposed within the ~~OCPW-OCFCD~~ right-of-way and adjacent to the San Juan Creek channel (Figure 2-2).

- Page 2-23 The APM (Adaptive Pumping Management) Plan would be implemented during the operational life of the proposed project. The APM Plan provides annual guidance on the management of groundwater production within the San Juan Basin in order to comply with the water rights permits held by the SBJA and SCWD.
- Page 2-24 The additional rubber dam facilities would be maintained identically to the Phase I rubber dam facility maintenance described above.
- Page 2-25 Implementation of the Project would require the following approvals:
- NMFS and U.S. Fish and Wildlife Service (Endangered Species Act Section 7 Consultation)
 - U.S. Army Corp of Engineers (Clean Water Act Section 404 Permit)
 - California Department of Fish and Wildlife (California Fish and Game Code Section 1600 Streambed Alteration Agreement)
 - State Water Resources Control Board (Construction General Permit coverage)
 - SDRWQCB (Clean Water Act Section 401 Water Quality Certification)
 - ~~OCPW (Flood Division) OCFCD (OCPW/County Property Permits)~~, encroachment permit
 - Moulton Niguel Water District, encroachment permit
 - SCWD, encroachment permit
 - City of San Juan Capistrano, encroachment permit
 - City of Dana Point, encroachment permit

Chapter 3.1 Aesthetic Resources

- Page 3.1-11 A mitigation measure has been modified:

AES-1: SMWD shall prepare a Dam Maintenance Plan that includes measures to regularly inspect and clean the rubber dam structures and impoundment areas (i.e., ponded areas upstream of each dam). The Plan shall include methods for cleaning trash and debris, removing graffiti, and cleaning out sediment and residues. The Plan would require annual maintenance and trash removal of the dam and fish passage prior to the rainy season consistent with OCDPW standards. SMWD shall coordinate in-channel maintenance actions with the Orange County Flood Control District and the cities of San Juan Capistrano and Dana Point. SMWD shall be responsible for implementing the maintenance plan.

Chapter 3.3 Biological Resources

Page 3.3-33 A mitigation measure has been modified:

BIO-1: In-channel construction and maintenance activities will be timed to avoid encountering special-status aquatic species to the maximum extent feasible. San Juan Creek and Arroyo Trabuco are typically without surface flows from late April or May through the summer and into the fall or early winter. Therefore, in-channel construction and maintenance activities will be conducted between June 1 and October 31 when surface flows are unlikely to occur and special-status fish species would not be present.

A Fish Rescue and Relocation Plan will be developed prior to commencement of Phase I construction to address scenarios where in-channel construction or maintenance activities must occur between November 1 and May 31, when construction/maintenance sites become inundated outside the rainy season, or when native fish become stranded during operation of the rubber dams. The Fish Rescue and Relocation Plan will define when fish rescue may be necessary; access to each construction site; approved rescue methods, such as seining or netting; how the rescued fish are held and transported to minimize stress and avoid predation; and identify release locations by size and species. The Plan will also include operations of the dam for the life of the project, including monitoring of ponded water and relocation of any stranded fish prior to cessation of upstream inflows. The Plan will be consistent with CDFW- and NMFS-approved fish relocation guidelines and will be approved by these agencies prior to its implementation.

See Master Response: Steelhead Recovery.

Chapter 3.8 Hydrology and Water Quality

Page 3.8-1 The proposed project is located in the San Juan watershed in southern Orange County (Chapter 2, *Project Description*, Figure 2-1). The San Juan watershed is approximately 175 square miles, extending from the headwaters in the Santa Ana Mountains in the Cleveland National Forest ~~in the east, west of the Pacific Ocean to the east of the Pacific Ocean~~ at Doheny State Beach at Dana Point.

Page 3.8-4 The total storage capacity ~~of the capacity~~ of the entire San Juan Basin is estimated to be 41,378 acre-feet (WEI 2017a). Over the time period of Fall 2012 to Spring 2017, the volume and percentage of total capacity of water in storage ranged from 24,864 acre-feet, 60 percent (Fall 2014) to 31,172 acre-feet, 75 percent (Spring 2017) (WEI 2016, 2017a).

- Page 3.8-7 The groundwater level thresholds to protect riparian vegetation are set to maintain groundwater levels above the deepest elevation observed prior to the start of the dry period that began in water year 2012 (e.g. October 2011) in the area just upstream of the upstream edge of the inundation area that would occur behind Rubber Dam No. 2 in the downstream portion of the Middle Basin (see Figure 3.8-3 for inundation areas and well locations) ...
- Seawater intrusion is monitored by obtaining groundwater level and water quality data at Monitoring Wells South Coast Water District (SCWD) MW-4S and MWDOC MW-2M, which serve as sentinel monitoring locations for seawater intrusion (see Figure 3.8-3 for well locations at the mouth of San Juan Creek).
- Page 3.8-18 ***Orange County Department of Public Works Flood Control Encroachment Permit***
- The Orange County Department of Public Works (OCPW) requires obtainment of an encroachment permit if work will occur within the OCFD county right-of-way. Submittal of an application for a flood encroachment permit must include a detailed description of work, scaled plans (including rights-of-way and jurisdictional boundaries), and a form demonstrating compliance with all applicable NPDES permits (OCPW 2016b). If the application is deemed complete, it is routed to applicable County departments service areas for review, such as Flood Programs or Flood Design, such as Infrastructure Programs, Operations & Maintenance, Environmental Resources, etc. Any corrections to plans required by these County departments service areas must be implemented by the applicant prior to the application's approval and issuance of the encroachment permit from the County (OCPW 2015).
- Page 3.8-11 Section 3.8 has been revised to move sections "Permit for Diversion and Use of Water (Permit 21074)" and "Permit for Diversion and Use of Water (Permit 21138)" to be included under the State Regulations section, instead of the Regional Regulations section.
- Page 3.8-25 A new mitigation measure has been added to the assessment of impacts to flood control channel:
- HYDRO-2: SMWD shall prepare an Operations Plan that identifies operational procedures for raising and lowering the dams. The Plan will identify triggers for lowering and raising the dam.**

Chapter 4 Cumulative Impacts

Page 4-17 The Orange County Department of Public Works (OCPW) is currently analyzing existing conditions and engineering alternatives prior to designing the San Juan Creek and Arroyo Trabuco Grade Stabilization Project. This project involves installing a number of grade control structures in San Juan Creek from Stonehill Drive ~~upstream just past the to La Novia Bridge and also up to the Oso Creek confluence on Arroyo Trabuco up in Trabuco Creek from confluence with San Juan Creek to Ramona Street...~~

Appendix E

The Hydrology Study Update Technical Memorandum has been added to the Final EIR.



CHAPTER 14

Mitigation Monitoring and Reporting Program

14.1 CEQA Requirements

Section 15091(d) and Section 15097 of the CEQA Guidelines require a public agency to adopt a program for monitoring or reporting on the changes it has required in the project or conditions of approval to substantially lessen significant environmental effects. This Mitigation Monitoring and Reporting Program (MMRP) summarizes the mitigation commitments identified in the Santa Margarita Water District's (SMWD) San Juan Watershed Project (proposed project) Final Program Environmental Impact Report (EIR) (State Clearinghouse No. 2016121001). Mitigation measures are presented in the same order as they occur in the Final Program EIR.

The columns in the MMRP table provide the following information:

- **Mitigation Measure(s):** The action(s) that will be taken to reduce the impact to a less-than-significant level.
- **Implementation, Monitoring, and Reporting Action:** The appropriate steps to implement and document compliance with the mitigation measures.
- **Responsibility:** The agency or private entity responsible for ensuring implementation of the mitigation measure. However, until the mitigation measures are completed, SMWD, as the CEQA Lead Agency, remains responsible for ensuring that implementation of the mitigation measures occur in accordance with the MMRP (CEQA Guidelines, Section 15097(a)).
- **Monitoring Schedule:** The general schedule for conducting each task, either prior to construction, during construction and/or after construction.

TABLE 14-1
MITIGATION MONITORING AND REPORTING PROGRAM
FOR THE SAN JUAN WATERSHED PROJECT FINAL PROGRAM EIR

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
Aesthetics			
AES-1: SMWD shall prepare a Dam Maintenance Plan that includes measures to regularly inspect and clean the rubber dam structures and impoundment areas (i.e., ponded areas upstream of each dam). The Plan shall include methods for cleaning trash and debris, removing graffiti, and cleaning out sediment and residues. The Plan would require annual maintenance and trash removal of the dam and fish passage prior to the rainy season consistent with OCDPW standards. SMWD shall coordinate in-channel maintenance actions with the Orange County Flood Control District and the cities of San Juan Capistrano and Dana Point. SMWD shall be responsible for implementing the maintenance plan.	<ul style="list-style-type: none"> Include mitigation measure in project design specifications. Coordinate with OCFCD and the cities of San Juan Capistrano and Dana point to perform site inspections to verify compliance. Retain inspection records in the project file. 	SMWD	Before Construction, After Construction
Biological Resources			
BIO-1: In-channel construction and maintenance activities will be timed to avoid encountering special-status aquatic species to the maximum extent feasible. San Juan Creek and Arroyo Trabuco are typically without surface flows from late April or May through the summer and into the fall or early winter. Therefore, in-channel construction and maintenance activities will be conducted between June 1 and October 31 when surface flows are unlikely to occur and special-status fish species would not be present. A Fish Rescue and Relocation Plan will be developed prior to commencement of Phase I construction to address scenarios where in-channel construction or maintenance activities must occur between November 1 and May 31, when construction/maintenance sites become inundated outside the rainy season, or when native fish become stranded during operation of the rubber dams. The Fish Rescue and Relocation Plan will define when fish rescue may be necessary; access to each construction site; approved rescue methods, such as seining or netting; how the rescued fish are held and transported to minimize stress and avoid predation; and identify release locations by size and species. The Plan will also include operations of the dam for the life of the project, including monitoring of ponded water and relocation of any stranded fish prior to cessation of upstream inflows. The plan will be consistent with CDFW- and NMFS-approved fish relocation guidelines and will be approved by these agencies prior to its implementation.	<ul style="list-style-type: none"> Include mitigation measure in construction contractor specifications. Retain copies of design and contractor specifications in project files. Prepare Fish Rescue and Relocation Plan Perform fish rescues, if necessary, pursuant to the CDFW and NMFS-approved Fish Rescue and Relocation Plan. Maintain records of correspondence with CDFW and NMFS. Perform site inspections to verify contractor compliance during fish rescues. 	SMWD; Construction Contractor	Before Construction, During Construction
BIO-2: To the extent feasible, ground-disturbing activities (including vegetation removal) and use of heavy equipment shall be scheduled outside the nesting season (September 1 to February 14 for songbirds; September 1 to January 14 for raptors) to avoid potential impacts to nesting birds. If avoidance of the nesting season is not feasible for ground-disturbing activities (including vegetation removal) and use of heavy equipment, suitable nesting habitat within 500 feet of activities shall be surveyed for the presence of nesting birds within 10 calendar days prior to the initiation of ground-disturbing activities by a qualified biologist. If any active nests are detected, a buffer of 300 feet for songbirds (or 500 feet for raptors) around the nest will be delineated, flagged, and avoided until the nesting cycle is complete. Nest buffer distances may be modified and/or other	<ul style="list-style-type: none"> Retain a qualified biologist. Include mitigation measure in construction contractor specifications. Perform site inspections to verify contractor compliance. Retain inspection records in the project file. Maintain records of correspondence with USFWS and CDFW. 	SMWD; Construction Contractor	Before Construction, During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
recommendations proposed as determined appropriate by the qualified biologist to minimize impacts. Nest buffer distance will be based on species, specific location of the nest, the intensity of construction/maintenance activities, existing disturbances unrelated to the proposed project present in the project area, and other factors. The qualified biologist will be responsible for coordinating with USFWS and CDFW to ensure proper measures are implemented to minimize impacts to any active nest sites that would be subject to disturbance.			
BIO-3: A qualified biologist shall determine the presence/absence of sensitive biological resources, including special-status plant and wildlife species, riparian habitat, and other sensitive vegetation communities, on a project site and evaluate potential impacts prior to construction during subsequent phases of the proposed project. Survey methodologies to determine presence/absence of biological resources will depend on the specific resources that may be present in a project area, but will comply with established agency protocols for such surveys. If special-status species are determined to occupy or potentially occupy any portion of a project site, avoidance and minimization measures such as seasonal restrictions, temporary fencing, and inspection of open trenches and holes for entrapped wildlife each morning prior to the onset of project construction shall be incorporated into the construction phase to avoid impacts to the greatest extent feasible. If a proposed component must be installed and will result in a loss of a riparian habitat or other sensitive vegetation community, compensatory habitat-based mitigation consisting of on-site preservation of habitat, restoration of similar habitat, or purchase of off-site credits from an approved mitigation bank shall be implemented. At a minimum the Santa Margarita Water District (SMWD) will provide compensation at a minimum 1:1 ratio for loss of habitat, except when regulatory agencies assign a higher compensation ratio on a case-by-case basis.	<ul style="list-style-type: none"> • Retain a qualified biologist. • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. • Maintain a record of correspondence with regulatory agencies regarding compensation for loss of riparian habitat or other sensitive vegetation community as a result of the project, if compensation is necessary. 	SMWD; Construction Contractor	Before Construction, During Construction, After Construction
BIO-4: Compensatory mitigation at a minimum ratio of 1:1 shall be provided to ensure no-net-loss of jurisdictional areas. Mitigation can be provided by purchasing into any authorized mitigation bank; by selecting a site of comparable acreage near the site and enhancing it with native riparian habitat or invasive species removal in accordance with a habitat mitigation plan approved by regulatory agencies; or by acquiring sufficient compensating habitat to meet regulatory agency requirements. SMWD shall obtain permits from the USACE, San Diego RWQCB, and CDFW for impacts to jurisdictional areas prior to construction. The regulatory agencies can impose greater mitigation requirements in their permits, but SMWD will utilize the 1:1 ratio as the minimum required to offset or compensate for permanent loss of jurisdictional area pursuant to CEQA.	<ul style="list-style-type: none"> • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. • Maintain a record of correspondence with regulatory agencies regarding compensation for loss of riparian habitat or other sensitive vegetation community as a result of the project, if compensation is necessary. 	SMWD; Construction Contractor	Before Construction, During Construction, After Construction
BIO-5: The Santa Margarita Water District shall coordinate with NMFS and OCPW to participate in steelhead habitat restoration priorities within the San Juan Creek watershed. Participation may include implementation of in-channel fish passage improvements within San Juan Creek and mutually agreed upon funding and/or planning assistance commensurate with SMWD's level of effect to assist the resource agencies with the Steelhead Core 1 Recovery Population goals. These migratory passage improvements implemented with assistance from SMWD would result in increased migration days within San Juan Creek and Arroyo Trabuco compared to modeled existing conditions.	<ul style="list-style-type: none"> • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. • Maintain a record of correspondence with NMFS and OCPW. 	SMWD; Construction Contractor	Before Construction, During Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
BIO-6: Prior to construction activities during subsequent phases of the proposed project occurring within the Central/Coastal Subregion and requiring incidental take authorization for potential impacts to state- or federal-listed species, SMWD shall ensure design, construction, operation, and maintenance of future components comply with goals, objectives, and stipulations of the Central/Coastal Subregion NCCP/HCP.	<ul style="list-style-type: none"> Perform site inspections to verify contractor compliance during future project construction activities that occur during subsequent phases of the proposed project and that require incidental take authorization. Retain inspection records in the project file. Include mitigation measure in construction contractor specifications for future projects within the Central/Coastal Subregion. 	SMWD	After Construction
Cultural Resources			
CUL-1: Prior to start of any ground-disturbing activities related to construction of the control building(s) and associated connections, the Santa Margarita Water District (SMWD) shall retain a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (U.S. Department of the Interior 2008) to carry out all mitigation related to archaeological resources. The qualified archaeologist shall be selected from the list of County of Orange certified archaeologists.	<ul style="list-style-type: none"> Retain a qualified archaeologist. 	SMWD	Before Construction
CUL-2: Prior to start of any ground-disturbing activities related to construction of the control building(s) and associated connections, the qualified archaeologist (or an archaeologist working under the direct supervision of the qualified archaeologist) shall conduct cultural resources sensitivity training for all construction personnel. Construction personnel shall be informed of the types of archaeological resources that may be encountered, the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains, and safety precautions to be taken when working with archaeological monitors. SMWD shall ensure that construction personnel are made available for and attend the training and retain documentation demonstrating attendance.	<ul style="list-style-type: none"> Retain a qualified archaeologist. Include mitigation measure in construction contractor specifications. Maintain an attendance record for cultural resources sensitivity training. 	SMWD; Construction Contractor	Before Construction; During Construction
CUL-3: Archaeological and Native American monitoring shall be conducted for all ground-disturbing activities related to construction of the control building(s) and associated connections, including but not limited to, brush clearance, grubbing, demolition and concrete removal, and grading. Archaeological monitoring shall be conducted by an archaeologist familiar with the types of archaeological resources that could be encountered within the project area, and under the direct supervision of the qualified archaeologist. The Native American monitor shall be selected from a tribe that is culturally and traditionally affiliated with the project area as indicated by the NAHC. In the event that archaeological resources are unearthed during ground-disturbing activities, the archaeological monitor and/or Native American monitor shall be empowered to halt or redirect ground-disturbing activities away from the vicinity of the discovery until SMWD, qualified archaeologist, and Native American monitor have evaluated the discovery and determined appropriate treatment (as prescribed in CUL-4). For discoveries within the city of San Juan Capistrano, the policies and procedures outlined in City Council Policy 601 shall also be followed. The archaeological monitor shall keep daily logs detailing the types of activities and soils observed, and any discoveries. After monitoring has been completed, the qualified archaeologist shall prepare a report that details the results of monitoring for submittal to SMWD and other	<ul style="list-style-type: none"> Retain a Qualified Archaeologist and a Native American monitor pursuant to requirements of the mitigation measure. Retain copies of the archaeological monitoring report and submit to agencies, the South Central Coastal Information Center, and Native American Tribes as appropriate. 	SMWD	Before Construction, During Construction, After Construction

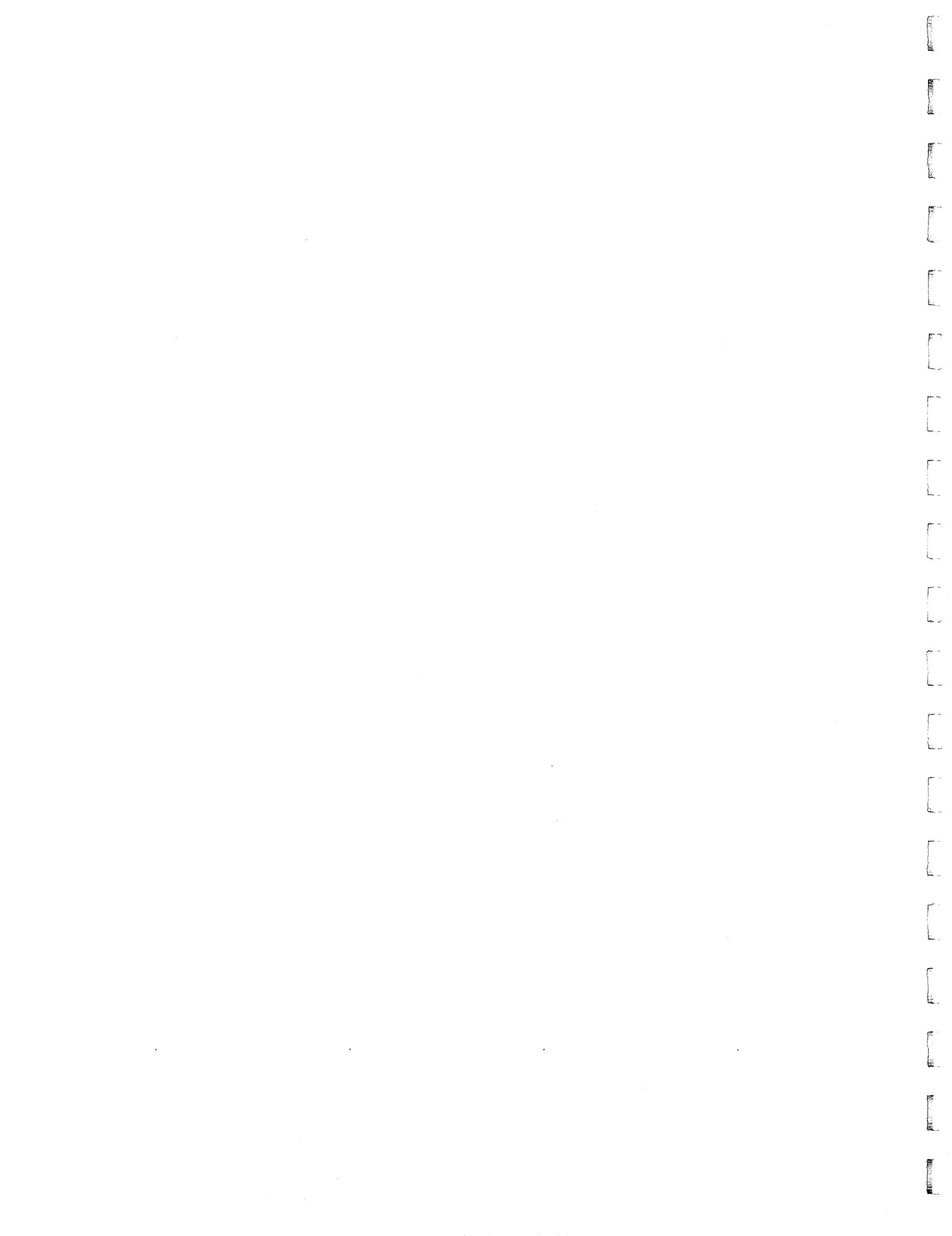
Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
<p>agencies, as appropriate, the South Central Coastal Information Center, and any Native American tribe that requests a copy.</p> <p>CUL-4: In the event of the unanticipated discovery of archaeological materials, SMWD shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until it can be evaluated by the qualified archaeologist. Construction shall not resume until the qualified archaeologist has conferred with SMWD on the significance of the resource. The SWRCB shall also be notified and afforded the opportunity to provide input on significance and treatment of any discoveries. For discoveries within the city of San Juan Capistrano, the policies and procedures outlined in City Council Policy 601 shall be also followed.</p> <p>If it is determined that the discovered archaeological resource constitutes a historic property under Section 106 of the National Historic Preservation Act, or historical resource or unique archaeological resource pursuant to CEQA, avoidance and preservation in place shall be the preferred manner of mitigation. Preservation in place maintains the important relationship between artifacts and their archaeological context and also serves to avoid conflict with traditional and religious values of groups who may ascribe meaning to the resource. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. In the event that preservation in place is determined to be infeasible and data recovery through excavation is the only feasible mitigation available, an Archaeological Resources Treatment Plan shall be prepared and implemented by the qualified archaeologist in consultation with SMWD that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. SMWD shall consult with appropriate Native American representatives in determining treatment for prehistoric or Native American resources to ensure cultural values ascribed to the resource, beyond that which is scientifically important, are considered. For treatment of discoveries within the city of San Juan Capistrano, the policies and procedures outlined in City Council Policy 601 shall also be followed.</p>	<ul style="list-style-type: none"> • Maintain records of correspondence with SWRCB. • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. • Preserve materials pursuant to mitigation requirements. • Maintain records of correspondence with appropriate Native American representatives. 	SMWD; Construction Contractor	During Construction, After Construction
<p>CUL-5: Prior to development of subsequent phases of the proposed project within facilities or areas that contain structures more than 45 years old, SMWD shall retain a qualified architectural historian, defined as meeting the Secretary of the Interior's Professional Qualification Standards for architectural history, to conduct a historic resources assessment including: a records search at the South Central Coastal Information Center; a review of pertinent archives and sources; a pedestrian field survey; recordation of all identified historic resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report documenting the methods and results of the assessment. All identified historic resources will be assessed for the proposed project's potential to result in direct and/or indirect effects to those resources and any historic resource that may be affected shall be evaluated for its potential significance prior to SMWD's approval of project plans and publication of subsequent CEQA documents. The qualified architectural historian shall provide recommendations regarding additional work or treatment for significant resources that will be affected by the proposed project prior to their demolition or alteration. For projects within the city of San Juan Capistrano that are subject to the provisions of Title 9, Chapter 2,</p>	<ul style="list-style-type: none"> • Retain a qualified architectural historian. • Retain copies of the historic resources assessment and technical reports. • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. 	SMWD; Construction Contractor	Before Construction, During Construction, After Construction.

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
Administration and Procedures of the Municipal Code, the policies and procedures outlined in City Council Policy 601 shall also be followed. If ground disturbance is also proposed, this assessment may be prepared in conjunction with the archaeological resources assessment outlined in CUL-6, provided that staff meet the requisite qualification standards.			
CUL-6: Prior to development of subsequent phases of the proposed project that involve ground disturbance, SMWD shall retain a qualified archaeologist, defined as meeting the Secretary of the Interior's Professional Qualification Standards for archaeology and who is on the list of County of Orange—certified archaeologists, to conduct an archaeological resources assessment including: a records search at the South Central Coastal Information Center; a Sacred Lands File search at the NAHC; a pedestrian field survey, where deemed appropriate by the qualified archaeologist; recordation of all identified archaeological resources on California Department of Parks and Recreation 523 forms; and preparation of a technical report documenting the methods and results of the study, and providing an assessment of the project area's archaeological sensitivity and the potential to encounter subsurface archaeological resources and human remains. All identified archaeological resources will be assessed for the proposed project's potential to result in direct and/or indirect effects to those resources and any archaeological resource that cannot be avoided shall be evaluated for its potential significance prior to SMWD's approval of project plans and publication of subsequent CEQA documents. The qualified archaeologist shall provide recommendations regarding archaeological and Native American monitoring, protection of avoided resources and/or recommendations for additional work or treatment of significant resources that will be affected by the proposed project. For projects within the city of San Juan Capistrano that are subject to the provisions of Title 9, Chapter 2, Administration and Procedures of the Municipal Code, the policies and procedures outlined in City Council Policy 601 shall also be followed. If the proposed project is within facilities or areas that contain structures more than 45 years old, this assessment may be prepared in conjunction with the historic resources assessment outlined in CUL-5, provided that staff meet the requisite qualification standards.	<ul style="list-style-type: none"> • Retain a qualified archaeologist. • Retain copies of the archaeological resources assessment and technical reports. • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. 	SMWD; Construction Contractor	Before Construction, During Construction, After Construction
CUL-7: Prior to start of any ground-disturbing activities, SMWD shall retain a qualified paleontologist meeting the Society for Vertebrate Paleontology (SVP) Standards (SVP 2010) to carry out all mitigation related to paleontological resources. The qualified paleontologist shall be selected from the list of County of Orange certified paleontologists.	<ul style="list-style-type: none"> • Retain a qualified paleontologist. • Include mitigation measure in construction contractor specifications. 	SMWD; Construction Contractor	Before Construction
CUL-8: Paleontological resources monitoring shall be performed during excavation activities by a qualified paleontological monitor under the direction of the qualified paleontologist at locations and depths as identified by the qualified paleontologist. The monitor shall have the authority to temporarily halt or divert work away from exposed fossils in order to recover the fossil specimens. The qualified paleontologist, based on observations of subsurface soil stratigraphy and/or other factors, may increase, reduce, or discontinue monitoring, as warranted. For discoveries within the city of San Juan Capistrano, the policies and procedures outlined in City Council Policy 601 shall also be followed.	<ul style="list-style-type: none"> • Retain copies of paleontological resources report. • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. 	SMWD; Construction Contractor	During Construction, After Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
CUL-9: If construction or other project personnel discover any potential fossils during construction, regardless of the depth of work, all work shall cease at that location (within 100 feet) until the qualified paleontologist has assessed the discovery and made recommendations as to the appropriate treatment. For discoveries within the city of San Juan Capistrano, the policies and procedures outlined in City Council Policy 601 shall be also followed.	<ul style="list-style-type: none"> Include mitigation measure in construction contractor specifications. Perform site inspections to verify contractor compliance. Retain inspection records in the project file. 	SMWD; Construction Contractor	During Construction
CUL-10: Prior to development of subsequent phases of the proposed project that involve ground disturbance, SMWD shall retain a paleontologist who meets the (SVP) Standards (SVP 2010) and who is on the list of County of Orange-certified paleontologists to conduct an paleontological resources assessment including: a database search at the Natural History Museum of Los Angeles County and/or other appropriate facilities (such as the San Diego Natural History Museum or University of California Museum of Paleontology); a pedestrian field survey, where deemed appropriate by the paleontologist; recordation of all identified paleontological resources; and preparation of a technical report that documents the methods and results of the study, provides an assessment of the project area's paleontological sensitivity and the necessity for paleontological monitoring, and outlines treatment for inadvertent discoveries, if deemed necessary. The report shall be prepared prior to SMWD's approval of project plans and publication of subsequent CEQA documents. For projects within the city of San Juan Capistrano that are subject to the provisions of Title 9, Chapter 2, Administration and Procedures of the Municipal Code, the policies and procedures outlined in City Council Policy 601 shall also be followed.	<ul style="list-style-type: none"> Retain a qualified paleontologist. Retain copies of field surveys. Include mitigation measure in construction contractor specifications. Retain records of inadvertent discoveries. 	SMWD; Construction Contractor	Before Construction, During Construction.
Hazards and Hazardous Materials			
HAZ-1: SMWD shall prepare a Vector Control Plan that will identify mosquito and midge breeding control BMPs in accordance with requirements of the Orange County Mosquito and Vector Control District. BMPs could include, but may not limited to, routine removal of vegetation, sediment, trash, and debris; monitoring and establishing control measures, such as mosquito traps, biological controls, or chemical controls; or ensuring the circulation of water. SMWD shall be responsible for effectively implementing vector control measures identified in the Plan within the dam impoundment zones of the creek channels.	<ul style="list-style-type: none"> Include mitigation measure in construction contractor specifications. Retain copies of the Vector Control Plan. Include mitigation measure in construction contractor specifications. Perform site inspections to verify contractor compliance. Retain inspection records in the project file. 	SMWD; Construction Contractor	Before Construction, During Construction.
Hydrology and Water Quality			
HYDRO-1: The Santa Margarita Water District (SMWD) shall coordinate with the Orange County Department of Public Works (OCPW) prior to finalization of designs to ensure that the rubber dam designs are consistent with future channel improvements under consideration by OCPW including the potential for vertical sidewall channels. SMWD shall obtain an Encroachment Permit from OCPW prior to installing the rubber dam facilities.	<ul style="list-style-type: none"> Retain records of correspondence with OCPW. Retain copies of Encroachment Permits received for the project. 	SMWD	Before Construction.

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
HYDRO-2: SMWD shall prepare an Operations Plan that identifies operational procedures for raising and lowering the dams. The Plan will identify triggers for lowering and raising the dam.	<ul style="list-style-type: none"> • Prepare Operations Plan • Maintain records of correspondence with OCPW, CDFW, and NMFS. • Include Operations Plan in final designs. • Implement Operations Plan. 	SMWD	Before Construction.
Transportation and Traffic			
<p>TR-1: Prior to the start of construction of the recycled water conveyance pipelines, SMWD shall require the construction contractor to prepare a Traffic Control Plan. The Traffic Control Plan will show all signage, striping, delineated detours, flagging operations and any other devices that will be used during construction to guide motorists, bicyclists, and pedestrians safely through the construction area and allow for adequate access and circulation to the satisfaction of the appropriate local jurisdiction. The Traffic Control Plan will be prepared in accordance with the local jurisdiction's traffic control guidelines and will be prepared to ensure that access will be maintained to individual properties, and that emergency access will not be restricted. Additionally, the Traffic Control Plan will ensure that congestion and traffic delay are not substantially increased as a result of the construction activities. Further, the Traffic Control Plan will include detours or alternative routes for bicyclists using on-street bicycle lanes as well as for pedestrians using adjacent sidewalks. In addition, SMWD shall provide written notice at least 2 weeks prior to the start of construction to owners/occupants along streets to be affected during construction.</p> <p>During construction, SMWD will maintain continuous vehicular and pedestrian access to any affected residential driveways from the public street to the private property line, except where necessary construction precludes such continuous access for reasonable periods of time. Access will be reestablished at the end of the workday. If a driveway needs to be closed or interfered with as described above, SMWD shall notify the owner or occupant of the closure of the driveway at least five working days prior to the closure. The Traffic Control Plan shall include provisions to ensure that the construction of the recycled water conveyance pipelines do not interfere unnecessarily with the work of other agencies such as emergency service providers, mail delivery, school buses, and municipal waste services.</p>	<ul style="list-style-type: none"> • Retain a qualified construction contractor to prepare a Traffic Control Plan. • Retain copies of the Traffic Control Plan. • Retain records of written notice to owners and occupants. • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. 	SMWD; Construction Contractor	Before Construction, During Construction.
TR-2: SMWD and the construction contractor shall develop detour plans to minimize impact to local bikeways, including, but not limited to, the San Juan Creek West Levee Trail Bikeway, Trabuco Creek East Levee Trail Bikeway, and Vereda Trail Bikeway. The detour plans may include the use of signing and flagging to guide cyclists and pedestrians around the construction areas. After construction is complete, SMWD shall ensure that bicycle or pedestrian facilities are restored to pre-construction conditions.	<ul style="list-style-type: none"> • Retain records of detour plans. • Include mitigation measure in construction contractor specifications. • Perform site inspections to verify contractor compliance. Retain inspection records in the project file. • Retain records of efforts to ensure that bicycle and pedestrian facilities are restored to pre-construction conditions. 	SMWD; Construction Contractor	Before Construction, During Construction, After Construction

Mitigation Measures	Implementation, Monitoring, and Reporting Action	Responsibility	Monitoring Schedule
Tribal Cultural Resources			
<p>TCR-1: SMWD shall initiate consultation within 14 days of determining that an application for a project is complete or a decision to undertake a project. SMWD shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice. Formal notification shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the SMWD contact information, and a notification that the California Native American tribe has 30 days from receipt of the letter to request consultation. SMWD shall begin the consultation process within 30 days of receiving a California Native American tribe's request for consultation.</p> <p>Consultation shall be considered complete when the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource, or when a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached.</p>	<ul style="list-style-type: none"> • Retain records of consultation and formal notifications sent pursuant to mitigation measure requirements. 	SMWD	Before Construction

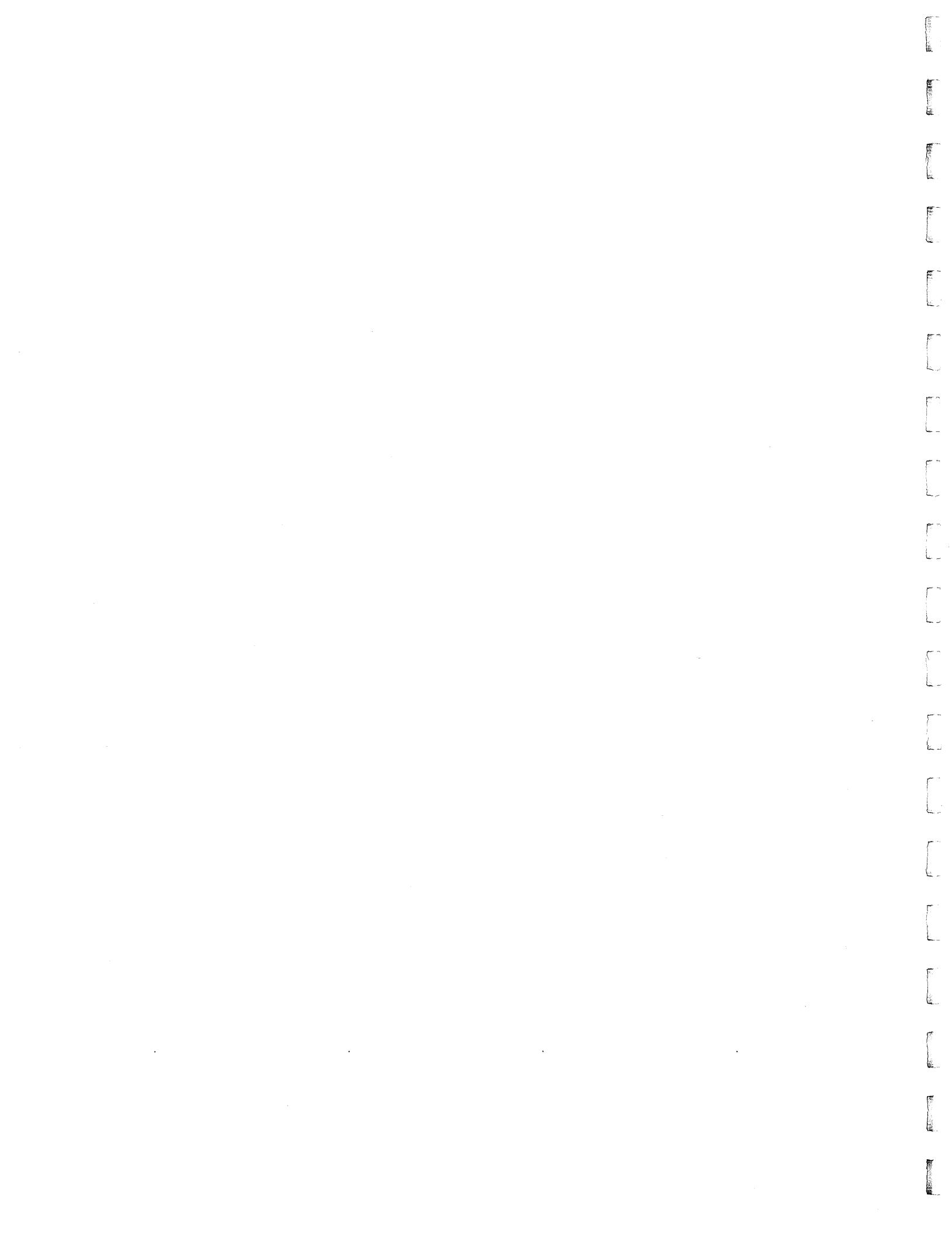


Appendix E

Hydrology Study Update

Technical Memorandum





Technical Memorandum

date December 5, 2018
to Don Bunts, Santa Margarita Water District
cc
from Andy Collison, PhD, Dane Behrens, PhD, P.E., Michael Strom
subject San Juan Watershed Project Updated Hydrology Assessments of San Juan and Trabuco Creeks including San Juan Creek Lagoon Effects and Sediment Transport Effects

This memorandum addresses comments by the California Department of Fish and Game regarding fish passage and habitat conditions on San Juan and Trabuco Creeks. Results from the existing lagoon model (referred to as the ‘QCM’) used in the prior impact assessment were used again, but results were subdivided to determine whether there were any measurable habitat differences between the longer record (1945-2015) and more recent years (1995-2015), and between years of different wetness. We also used the existing flow record for existing and project conditions to estimate any changes in total sediment load that might result from the project. The following sections provide more detail on the habitat and transport assessments.

1. Lagoon Habitat Conditions

In response to comments, ESA subdivided the 1945-2015 time series of daily flows provided by WEI into ‘wet’, ‘moderate’, and ‘dry’ conditions. Figure 1 shows exceedance curves of total runoff in San Juan Creek for 1945-2015 and for 1995-2015, and shows the divisions made to bracket years into each different wetness type. Years where flow was at or below the lowest 33 percentile for total flow were classified as ‘dry’; years between the 33rd and 67th percentile flow were classified as ‘moderate’ and years where flow was above the 67th percentile were classified as ‘wet’. For comparison, Figure 1 also shows the runoff conditions at two nearby gauged sites for the same time periods. Overall, the most recent 20 years has a similar range of year types as the full time series, so running the analysis for just the last 20 years would not greatly change the results in terms of days per year that various conditions were met or not met.

Figures 2 and 3 show exceedance curves for the number of days of fish passage on San Juan and Trabuco Creeks. The number of fish passage days is subdivided by time series (1945-2015 or 1995-2015), and by year wetness type. As expected, wetter years have more fish passage days (mouth of the lagoon more frequently open) than ‘moderate’ or ‘dry’ years under both existing and project conditions, and the project results in a slightly smaller number of fish passage days compared to existing conditions, as has been discussed in ESA’s prior report.

Comparing Runoff Conditions : 1945-2015 vs 1995-2015

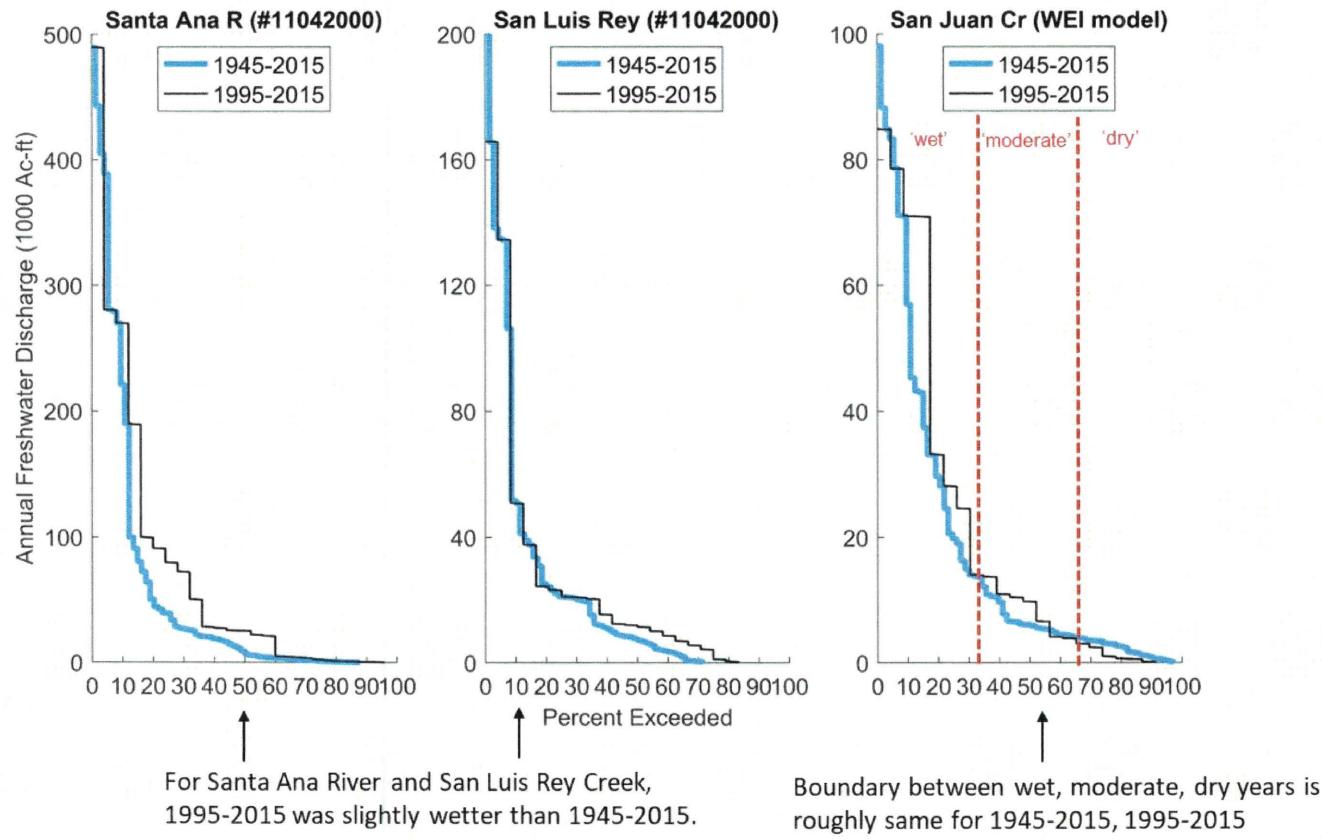


Figure 1. Comparison of 1945-2015 and 1995-2015 conditions for three sites, including San Juan Creek

Fish Passage on San Juan Creek: Exceedance

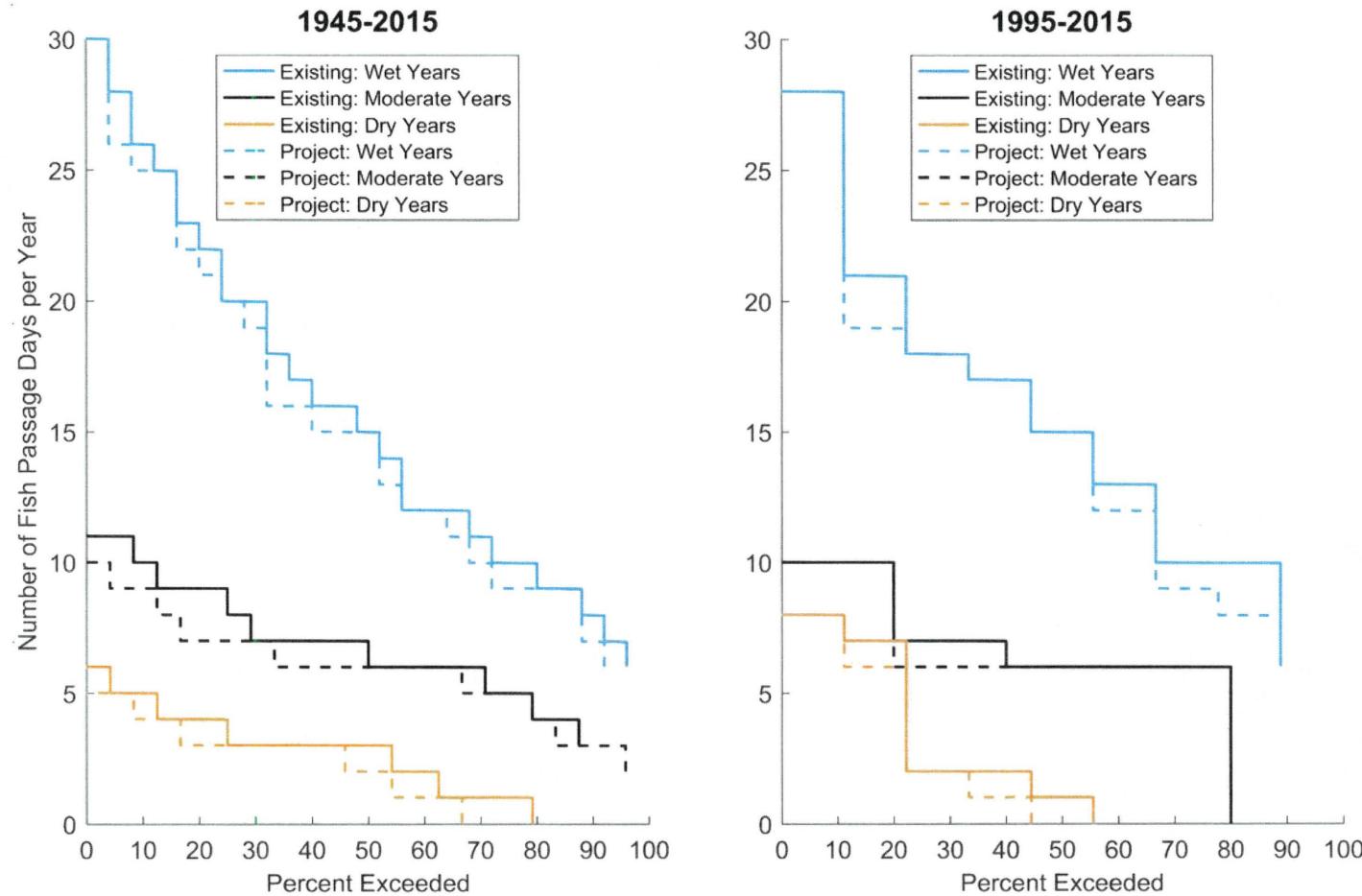


Figure 2. Comparison of the number of predicted fish passage days on San Juan Creek for wet, dry, and moderate years for the entire record and the most recent 20 years.

Fish Passage on Trabuco Creek: Exceedance

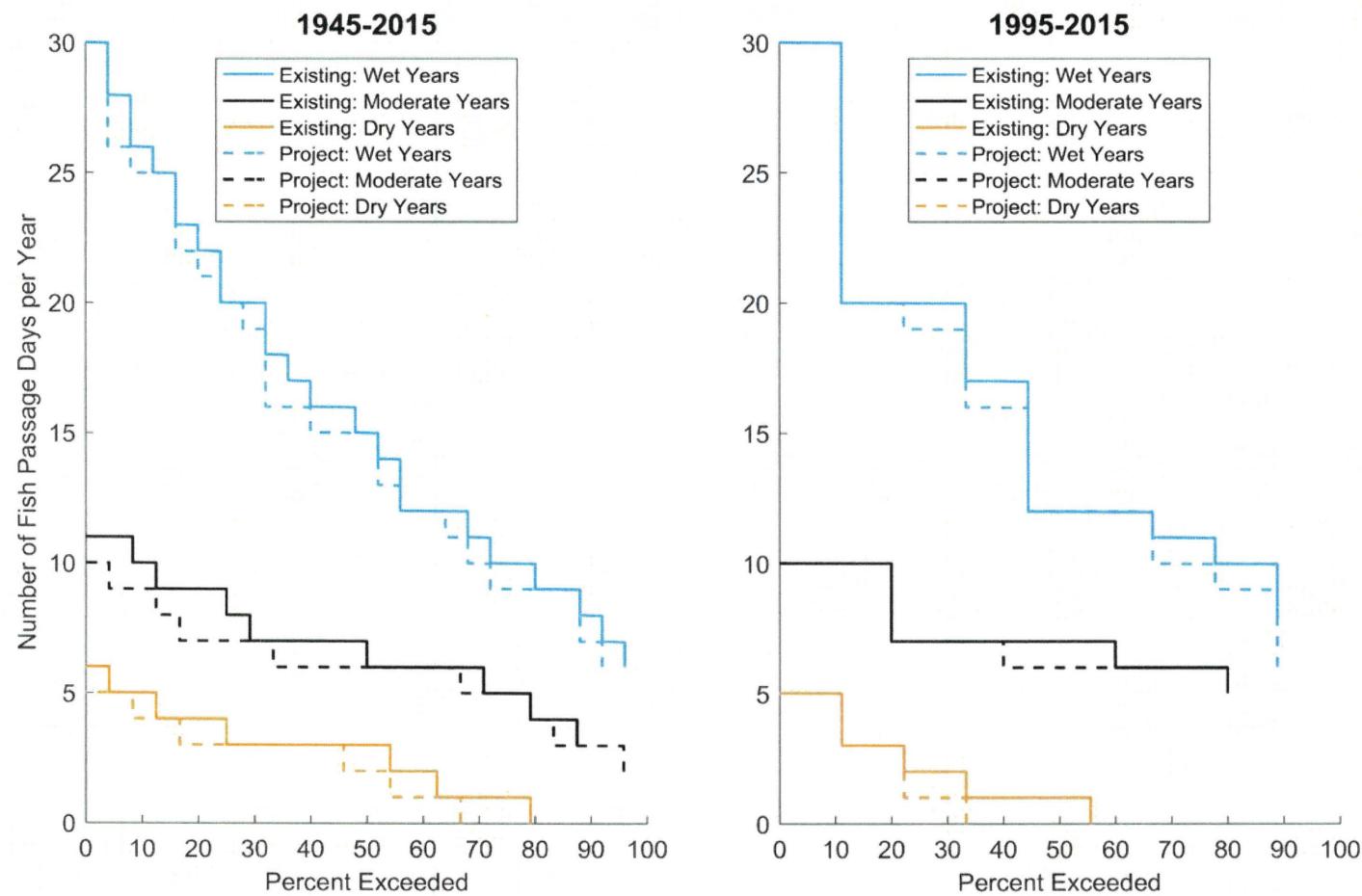


Figure 3. Comparison of the number of predicted fish passage days on Trabuco Creek for wet, dry, and moderate years for the entire record and the most recent 20 years.

2. Lagoon and Fish Passage Conditions in Different Years

Average lagoon depth, inundation area, and salinity were predicted by the lagoon QCM model described in the previous ESA report. Depth and inundation area were estimated by comparing the lagoon water level time series to the hypsometry (water surface elevation vs volume relationship) developed for the lagoon. Salinity was estimated by comparing the influx terms (wave overwash in and incoming tides) and outflux terms (outgoing tides, groundwater exchange, seepage through the beach berm) that are already solved as part of the model. Since the lagoon is known to be vertically stratified (freshwater layer overlaying a salty, trapped layer of water on the bottom), this analysis relates to the salinity of the lower layer. When salinity is zero, it represents conditions when the entire water column consists of freshwater and is no longer stratified. We tested the model salinity predictions against salinity measurements in the lagoon in 2015.

Figures 4-6 and Table 1 illustrate the lagoon depth, inundation area, and bottom salinity in detail.

As can be seen in Table 1, in wet years the project has very little effect on lagoon conditions, with depth, area, bottom water salinity and days of potential fish passage being between 92 and 96% of their values under existing conditions. In moderate years the project effect is slightly larger but still relatively small, with lagoon and fish passage properties ranging from 80-91% of their values under existing conditions. The largest project effect is on lagoon area, which falls to 80% of existing conditions. In dry years the project effect is greatest, with fish passage being reduced to 75% of existing conditions, and lagoon area to 71% of existing conditions.

Average Lagoon Depth: Typical Time Series

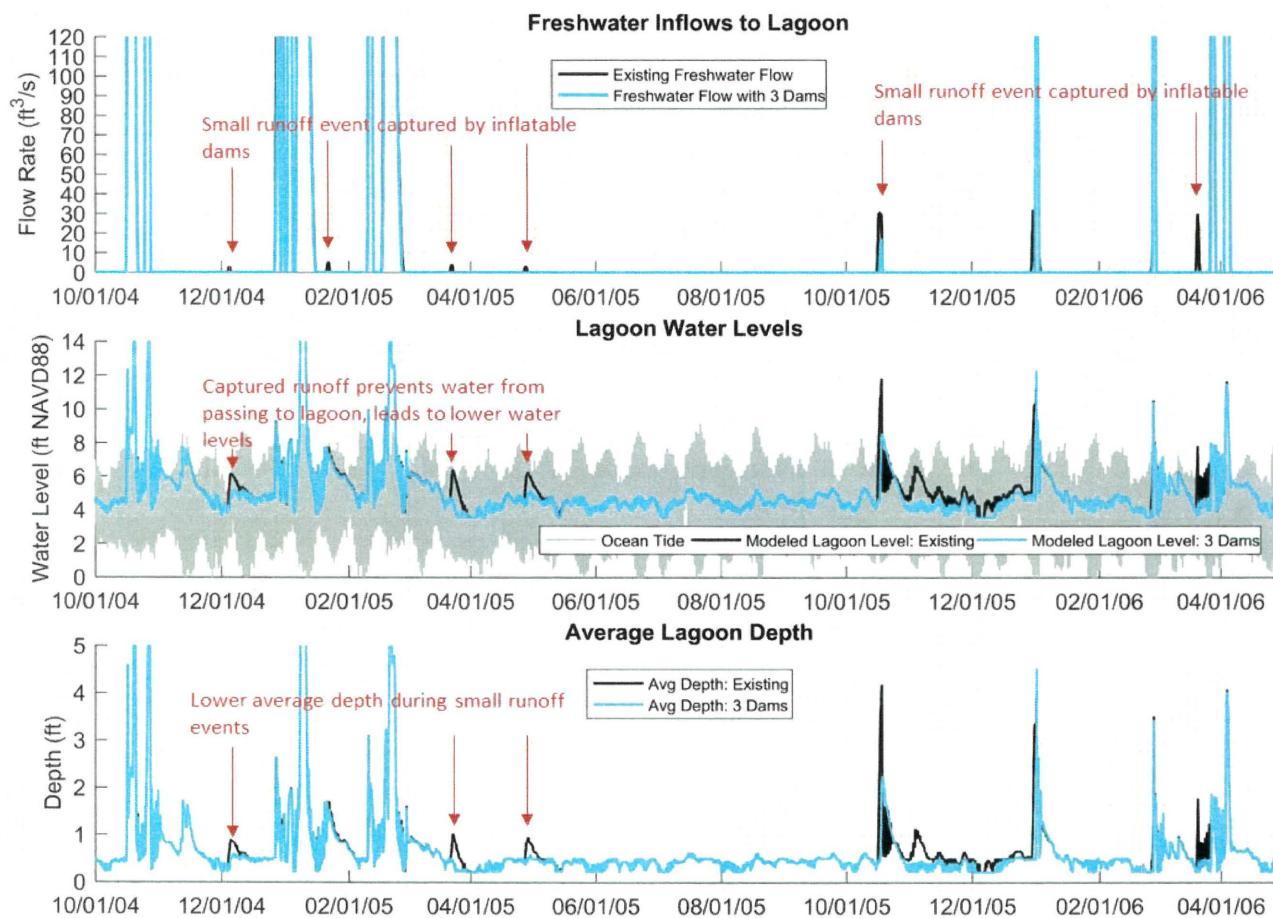


Figure 4a. Typical time series comparing freshwater inflows, lagoon water levels, and average depth for existing and project conditions.

Average Lagoon Depth: Exceedance

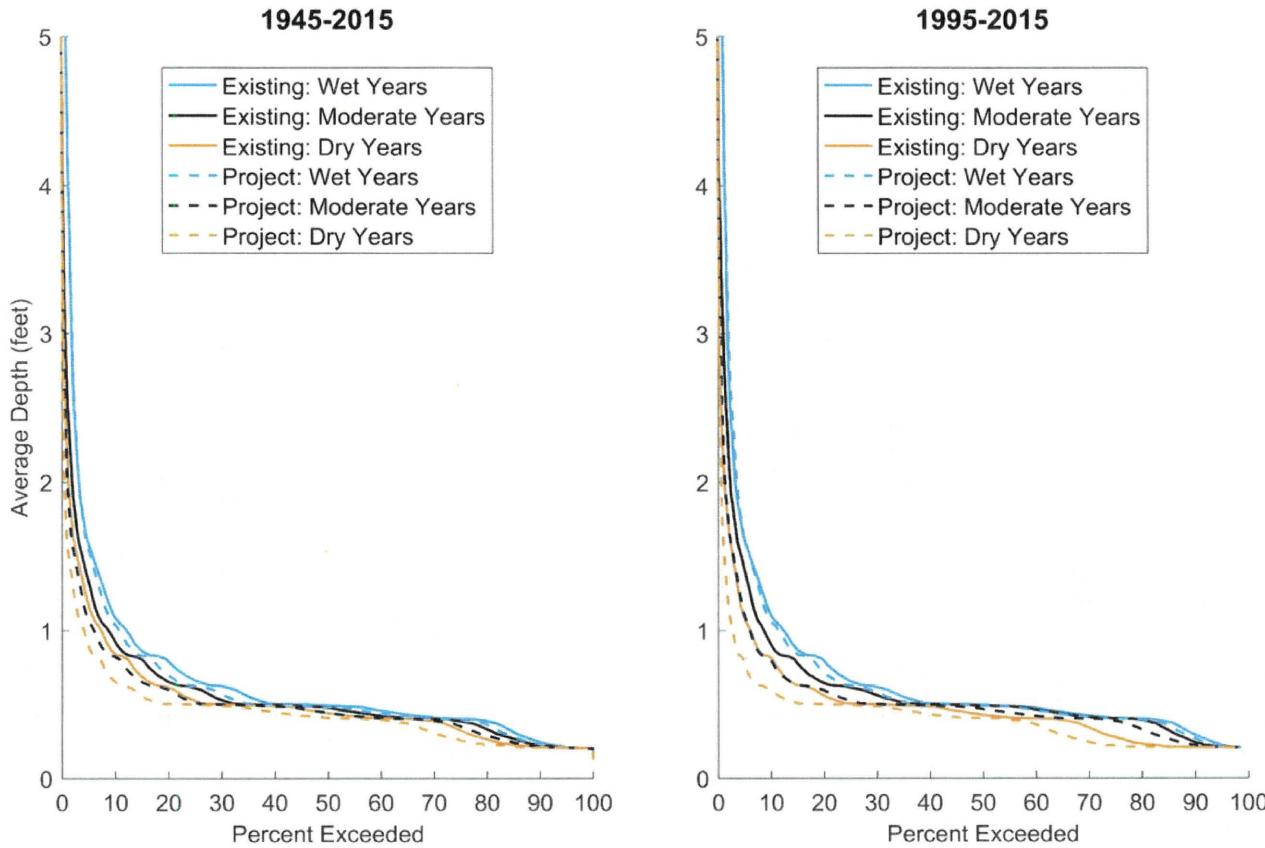


Figure 4b. Exceedance curves for predicted average lagoon depth under existing and project conditions.

Inundation Area: Typical Time Series

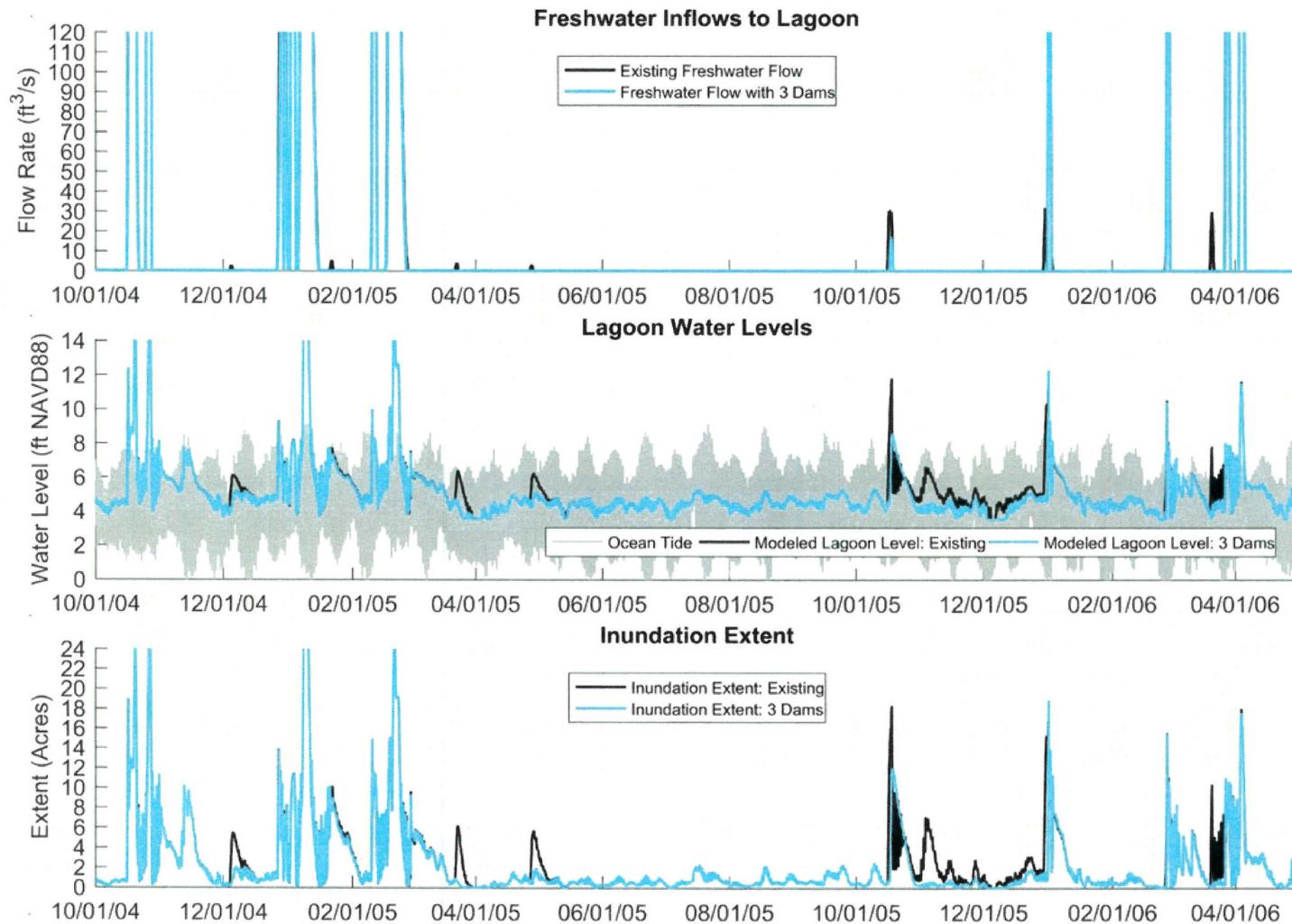


Figure 5a. Typical time series comparing freshwater inflows, lagoon water levels, and inundation extent for existing and project conditions.

Inundation Area: Exceedance

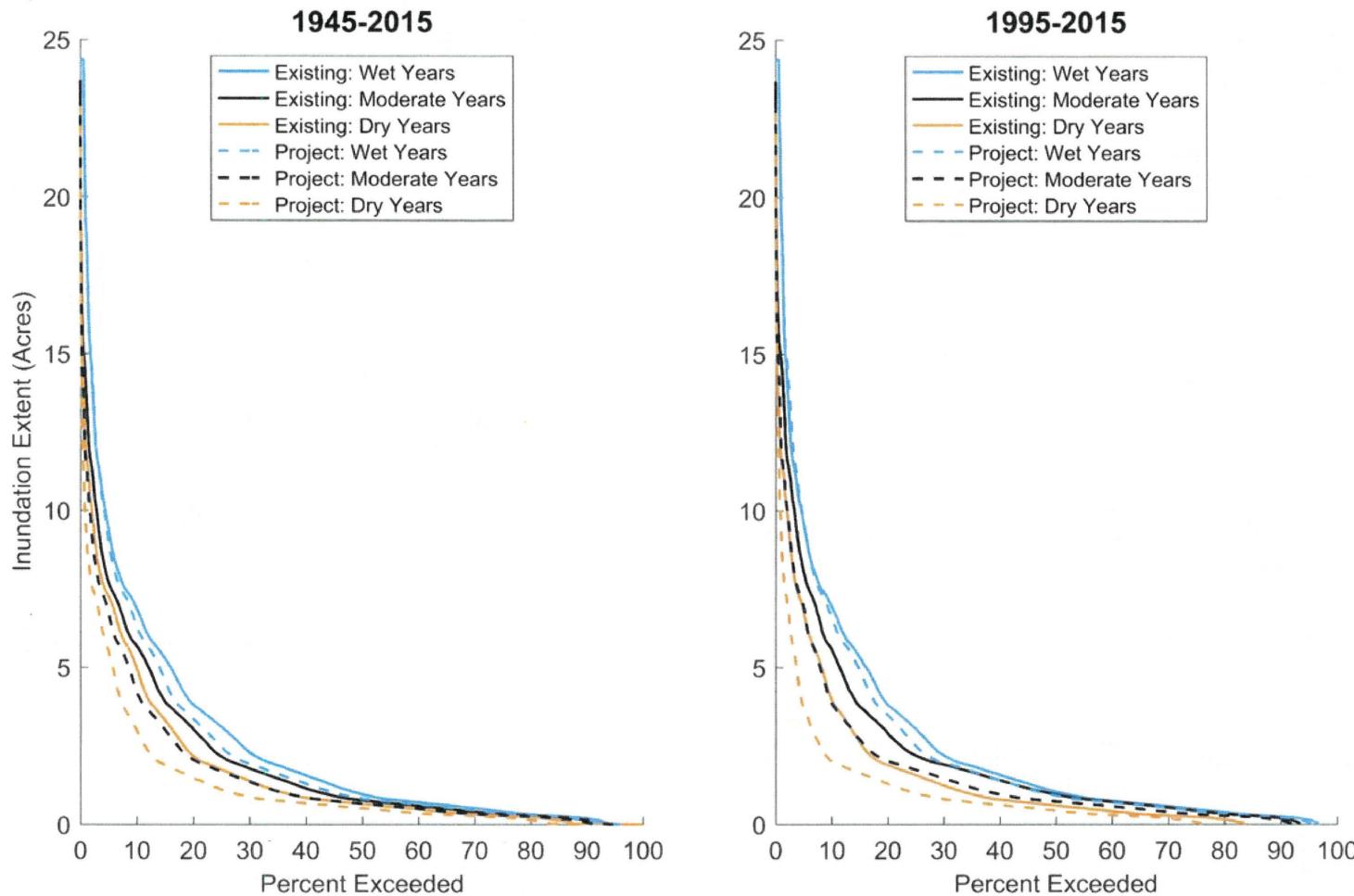


Figure 5b. Exceedance curves for predicted inundation area in the lagoon under existing and project conditions.

Average Salinity: Exceedance

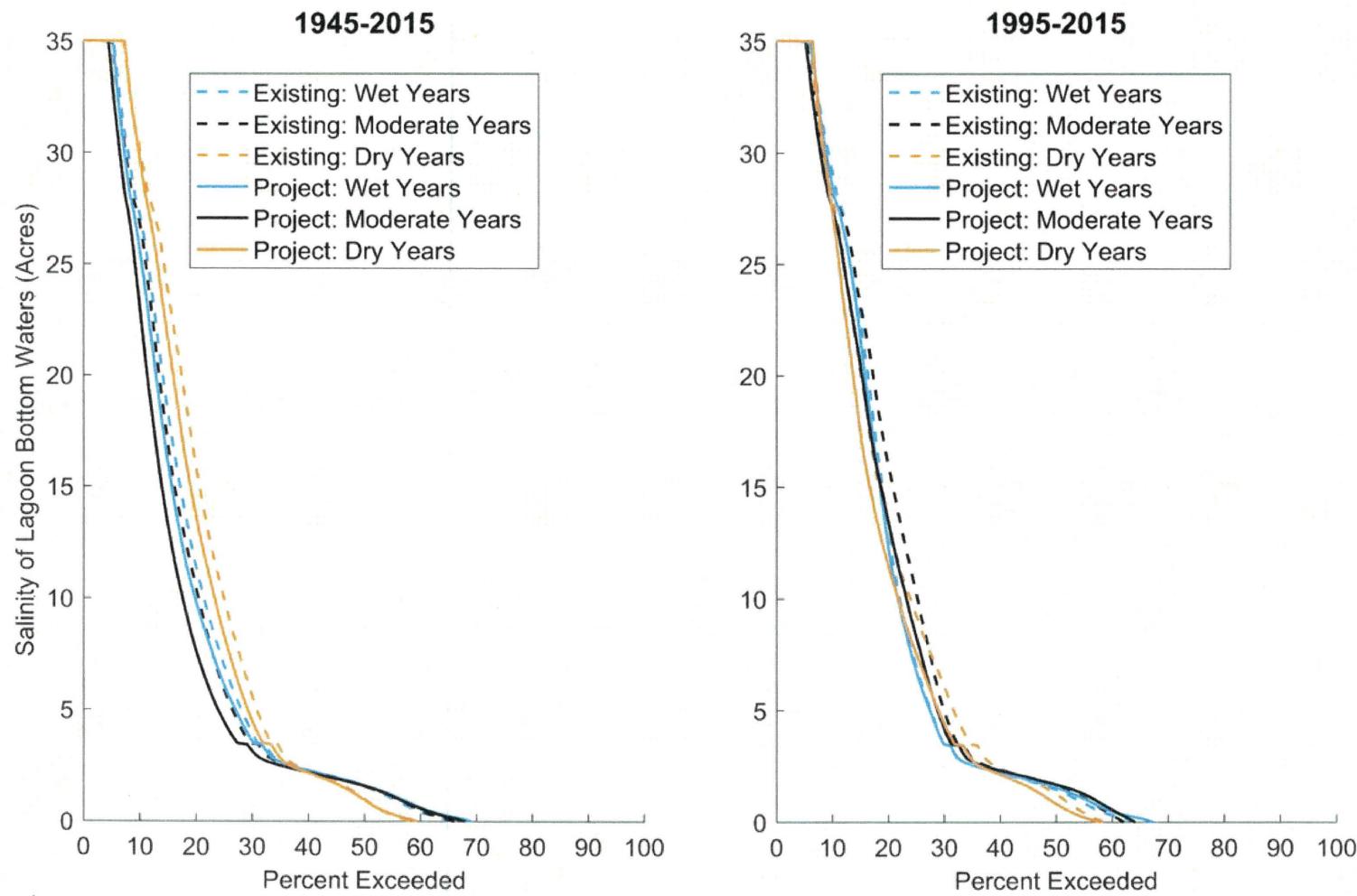


Figure 6. Exceedance curves for the predicted average salinity of the lower salty layer in the lagoon.

TABLE 1A – MODELED LAGOON CONDITIONS FOR 1945-2015 AND 1995-2015

	Existing Conditions					Project Conditions (3 Dams)				
	Avg Depth (feet)	Inundation Area (Acres)	Bottom Water Salinity (psu)	Fish Passage Days at San Juan Cr Mouth	Fish Passage Days at Trabuco Cr Mouth	Avg Depth (feet)	Inundation Area (Acres)	Bottom Water Salinity (psu)	Fish Passage Days at San Juan Cr Mouth	Fish Passage Days at Trabuco Cr Mouth
1945-2015										
Wet Years	0.67	2.50	6.51	16.72	15.84	0.64	2.29	6.19	15.92	15.12
Mod. Years	0.57	1.96	6.27	6.63	6.63	0.52	1.57	5.63	5.92	5.92
Dry Years	0.52	1.64	7.34	2.38	2.38	0.45	1.16	6.95	1.92	1.92
1995-2015										
Wet Years	0.68	2.50	6.89	16.33	15.56	0.67	2.29	6.80	15.56	14.89
Mod. Years	0.60	1.96	7.29	7.00	7.00	0.53	1.57	6.83	6.80	6.80
Dry Years	0.50	1.64	6.94	1.33	1.33	0.42	1.16	6.44	1.00	1.00

TABLE 1B – RELATIVE CHANGE FROM EXISTING CONDITIONS

	Existing Conditions					Project Conditions (3 Dams) Percent of Existing Conditions				
	Avg Depth (feet)	Inundation Area (Acres)	Bottom Water Salinity (psu)	Fish Passage Days at San Juan Cr Mouth	Fish Passage Days at Trabuco Cr Mouth	Avg Depth (feet)	Inundation Area (Acres)	Bottom Water Salinity (psu)	Fish Passage Days at San Juan Cr Mouth	Fish Passage Days at Trabuco Cr Mouth
1945-2015										
Wet Years	--	--	--	--	--	96	92	95	95	95
Mod. Years	--	--	--	--	--	91	80	90	89	89
Dry Years	--	--	--	--	--	87	71	95	81	81
1995-2015										
Wet Years	--	--	--	--	--	99	92	99	95	96
Mod. Years	--	--	--	--	--	88	80	94	97	97
Dry Years	--	--	--	--	--	84	71	93	75	75

3. Sediment Transport Analysis

The effect of the project on sediment transport in the lagoon was estimated by superimposing the distribution of daily flows on the bed sediment transport curves for the reach downstream of the lowest proposed dam and upstream of the lagoon, for a range of sediment grain sizes in the lagoon. This analysis shows which flows cumulatively move most sediment (e.g. many small flows or a few very large flows) and then looks at the effects of the dams on those flows. Two effects were accounted for: the reduction in flow and sediment transport capacity due to increased percolation in the dams, as well as the fact that when the dams are in place no sediment transport is assumed to occur due to the backwater effect. The analysis does not account for the likelihood that some or all sediment deposited in the dams when they were up would subsequently flush downstream once the dams were lowered, or during the next large flow for which the dams were not raised. Thus, this simple analysis likely overestimated the project effect on sediment transport.

Table 2 illustrates the predicted percent reduction in total load between project and existing conditions. The 'Dam flow threshold' category refers to the threshold below which no transport is assumed to occur, since the dam is in place and there is a backwater in place. Two trends can be seen from the table. Firstly, the vast majority of sediment is moved during wet years, and secondly, wet years are least affected by the project. As shown in Table 2A, under existing conditions 88% of sand-sized sediment (2,570,000 tons) is moved by the creek during wet years, 10% (288,000 tons) during moderate years, and only 2% (63,900 tons) during dry years. For sediment coarser than sand the trend is even more pronounced: 96% of 8 mm gravel and 100% of 32 mm sediment is moved by wet years. The project effect is greatest in percentage terms for dry years: for example, if the dams are operated up to 100 cfs before being lowered they would reduce the transport capacity of 1 mm sand by 35% in a dry year, 14% in a moderate year, and 3% in a wet year. In other words, the project would have a marked effect on sediment transport capacity during dry years when very little sediment is moving, but very little effect in wet years when the vast majority of sediment is moved. The analysis shows that the overall effect of the project on sediment transport to the lagoon would be very slight.

TABLE 2A – TOTAL SEDIMENT LOAD (TONS) FOR EXISTING AND WITH PROJECT CONDITIONS

Dam Flow Threshold (cfs)	Grain size (mm)	Dry Year		Moderate Year		Wet Year	
		Existing	With Project	Existing	With Project	Existing	With Project
none	1	63,900	50,300	288,000	262,000	2,570,000	2,530,000
	8	2,830	2,450	54,500	51,600	1,460,000	1,450,000
	32	0	0	0	0	189,000	188,000
100	1	63,900	41,400	288,000	247,000	2,570,000	2,500,000
	8	2,830	2,450	54,500	51,600	1,460,000	1,450,000
	32	0	0	0	0	189,000	188,000
500	1	63,900	13,500	288,000	168,000	2,570,000	2,340,000
	8	2,830	2,430	54,500	51,600	1,460,000	1,450,000
	32	0	0	0	0	189,000	188,000

TABLE 2B – % REDUCTION IN TOTAL SEDIMENT LOAD FROM EXISTING CONDITIONS

Dam Flow Threshold (cfs)	Grain size (mm)	Dry Year	Moderate Year	Wet Year
none	1	21.3	8.8	1.7
	8	13.7	5.3	0.8
	32	none in EC	none in EC	0.4
100	1	35.2	14.1	2.7
	8	13.7	5.3	0.8
	32	none in EC	none in EC	0.4
500	1	78.9	41.4	9.1
	8	14.1	5.4	0.8
	32	none in EC	none in EC	0.4

