COMMENT LETTER 92 - FRIENDS OF THE ESTEROS/EAC, RICHARD CHARTER (OCTOBER 4, 1996), RECEIVED OCTOBER 7, 1996

Response to Comment 92-1

Comment Summary: The comment states that the comment letter on the Draft EIR/EIS is submitted on behalf of the Friend of the Esteros/EAC and Richard Charter.

Specific concerns were expressed in subsequent comments and these comments are addressed specifically in the Responses to Comments below.

Response to Comment 92-2

Comment Summary: The comment states that the Draft EIR/EIS is deficient in that it fails to consider substantial issues and there are omissions identified by specific referenced technical comments on the document itself.

The comment is non-specific and refers to other comments (Comments 92-3 through 92-245). These comments are addressed specifically in the Responses to Comments 92-3 through 92-245 below.

Response to Comment 92-3

Comment Summary: The comment states that the Draft EIR/EIS does not consider a full range of available and feasible alternatives, despite their being raised during the Scoping process. The comment refers to specifics in Attachments A and B.

Appendix D-6 (Documentation in Support of Elimination of Alternatives) of the Draft EIR/EIS provides reasons for elimination of alternatives prior to and during scoping. The Ocean Outfall Alternative (discussed in Attachments A and B of the comment) was eliminated because it did not achieve the Project purpose of water reclamation. Alternatives were not considered further if they did not address the Project purpose and need, if they were excessively costly, or if technological or logistic constraints rendered them impracticable. The Draft EIR/EIS considers a range of feasible alternatives that meet the Project purpose and need. The comments in Attachments A and B are addressed in Responses to Comments 92-36 through 92-51.

Response to Comment 92-4

Comment Summary: The comment states that some of the alternatives included in the Project, such as the 20 percent Russian River Discharge Alternative, are not reclamation options.

Section 1.1 (page 1-4) of the Draft EIR/EIS indicates that the purpose of the Project is to dispose of the reclaimed water in a manner that maximizes recycling and reuse. Alternatives 2 and 3 use reclaimed water through both agricultural and urban irrigation.

Alternative 4 reuses water for production of steam by recharging the geysers steamfield. Alternative 5, discharge to the Russian River, also constitutes recycling, as most of the reclaimed water originates from the River and is supplied to the Santa Rosa area by the Sonoma County Water Agency. Refer to pages 3.1-4 through 3.1-27 of the Draft EIR/EIS for a description of each of the alternatives.

Response to Comment 92-5

Comment Summary: The comment indicates that the Draft EIR/EIS arbitrarily establishes thresholds of significance for project impacts.

The terms used in the Draft EIR/EIS are evaluation criteria and points of significance. Each evaluation criterion and point of significance was developed as a draft criterion and point of significance using pertinent policies of appropriate regulatory agencies and private organizations and the best professional judgment of the EIR/EIS authors. These draft criteria and points of significance were then submitted to the US Army Corps of Engineers for review. Amended criteria and points of significance were then submitted to City of Santa Rosa staff for review and approval. Draft criteria were presented to the public in preliminary form at a series of roundtables. Comments on the criteria were accepted at the roundtables. City staff ultimately provided a recommendation to the Board of Public Utilities that the criteria and points of significance were appropriate and should be adopted. The Board of Public Utilities subsequently adopted the criteria and points of significance and they were carried forward and utilized as the basis for the analysis of impacts in the Draft EIR/EIS. The evaluation criteria and points of significance, like other aspects of the Draft EIR/EIS, may be evaluated for their appropriateness during public review. In addition, if during the public review, the evaluation indicates that the evaluation criteria and points of significance should be amended and specific changes which can be justified are provided, the evaluation criteria and points of significance may be altered to reflect the more appropriate criteria. However, the information provided in this comment does not provide any justification for reevaluating any of the criteria utilized in the Draft EIR/EIS.

Response to Comment 92-6

Comment Summary: The comment suggests that mitigation measures provided in the Draft EIR/EIS have not been demonstrated to be effective.

The comment provides no information as to which mitigation measures have not been demonstrated to be effective or why. Therefore, no response can be provided.

Response to Comment 92-7

Comment Summary: This comment states that the Draft EIR/EIS contains a number of erroneous assumptions, which are cited in the detailed technical comments.

This comment does not identify the "erroneous assumptions" within the Draft EIR/EIS. Any specific concerns expressed in subsequent comments are addressed specifically in the Responses to Comments below.

Response to Comment 92-8

Comment Summary: The comment states that within the Draft EIR/EIS, significant impacts are identified and no mitigation measures are suggested.

The comment is correct that there were some significant impacts for which no feasible mitigation could be identified. This is summarized in Draft EIR/EIS Table 1-13 on pages 1-4 through 1-57. Table 1-13 identifies impacts for which no mitigation is proposed, but for which measures have been incorporated in the Project design to reduce impacts. As described in Response to Comment 92-91, the magnitude of Impacts 6.5.3 and 6.7.3 are reduced by Mitigation Measures 2.5.1, 2.5.2 and 2.5.3, but impacts remain significant after mitigation. However, Tables 1-13 and 4.6-58 do not list Mitigation Measures 2.5.1, 2.5.2 and 2.5.3 in association with Impacts 6.5.3 and 6.7.3.

The following changes are made to the Draft EIR/EIS:

Page 1-47. Table 1-13 is revised as follows:

Table 1-13

Summary of Significant Impacts and Mitigation

Impact	No Action	South County Irrigation				West County Irrigation					Geysers	Discharge		Mitigation Measures
	1	2A	2B	2C	2D	3A	3B	3C	3D	3E	4	5A	5B	
6.5.1. Dissolved oxygen. The storage reservoir component may cause numeric-based criteria to be exceeded.		⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙				2.5.3 Control program for hydrogen sulfide, ammonia, and dissolved oxygen.
6.5.1. Hydrogen sulfide. The storage reservoir component may cause numeric-based criteria to be exceeded.		⊙		⊙	⊙	⊙	⊙	⊙	⊙	⊙				2.5.3 Control program for hydrogen sulfide, ammonia, and dissolved oxygen.
6.5.3. Salinity, ammonia, dissolved oxygen, planktonic algae, benthic algae, and metals. The storage reservoir component may cause special-site criteria to be exceeded.						●	●	●	●	●				2.5.3 Control program for hydrogen sulfide, ammonia, and dissolved oxygen.~~No feasible mitigation has been identified.~~
6.7.1. Dissolved copper. Agricultural irrigation may cause numeric-based criteria to be exceeded.						⊙	⊙	⊙	⊙	⊙				2.5.2 Control program for dissolved copper levels in West County creeks.
6.7.3. Salinity, ammonia, dissolved oxygen, planktonic algae, benthic algae, and metals. The agricultural irrigation may cause the special site criterion to be exceeded.						●	●	●	●	●				2.5.1 Pesticide Control Program, 2.5.2 Control Program for Dissolved Copper Levels.~~No feasible mitigation has been identified.~~
6.9.1. Conductivity. Discharge component may cause numeric-based criteria to be exceeded.												●		No feasible mitigation has been identified.
6.9.1. Cyanide. Discharge component may cause numeric-based criteria to be exceeded.	●												⊙	2.5.5. Cyanide Monitoring and Source Control Program
6.9.1. Dissolved oxygen. Discharge component may cause numeric-based criteria to be exceeded.													●	No feasible mitigation has been identified.

Page 4.6-149, Table 4.6-58 is revised as follows:

SUMMARY OF SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Table 4.6-58

Summary of Impacts and Mitigation Measures - Surface Water Quality

Impact	Level of Significance	Mitigation Measure
No Action Alternative		
6.1.1. The No Action Alternative may cause numeric-based criteria to be exceeded. (See 6.9.1 for detailed description).	Alt 1 - ●	No mitigation
6.1.2. The No Action Alternative may cause narrative-based criteria to be exceeded. (see 6.9.2 for detailed description).	Alt 1 - ●	No mitigation
Storage Reservoir Component		
6.5.1 Ammonia. The storage reservoir component may cause numeric-based criteria to be exceeded.	Alt 2A - ⊙ Alt 2C - ⊙ Alt 2D - ⊙ Alt 3 - ⊙	2.5.3 Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen.
6.5.1 Dissolved oxygen. The storage reservoir component may cause numeric-based criteria to be exceeded.	Alt 2A - ⊙ Alt 2C - ⊙ Alt 2D - ⊙ Alt 3 - ⊙	2.5.3 Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen.
6.5.1 Hydrogen sulfide. The storage reservoir component may cause numeric-based criteria to be exceeded.	Alt 2A - ⊙ Alt 2C - ⊙ Alt 2D - ⊙ Alt 3 - ⊙	2.5.3 Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen.
6.5.3. The storage reservoir component may impact special sites.	Alt 3 - ●	2.5.3 Control program for hydrogen sulfide, ammonia, and dissolved oxygen.~~No feasible mitigation has been identified.~~
Agricultural Irrigation Component		
6.7.1 Dissolved copper. The	Alt 3 - ⊙	2.5.2 Control Program for Dissolved

Table 4.6-58

Summary of Impacts and Mitigation Measures - Surface Water Quality

Impact	Level of Significance	Mitigation Measure
agricultural irrigation component may cause numeric-based criteria to be exceeded.		Copper Levels in West County Creeks.
6.7.3. Salinity, ammonia, dissolved oxygen, planktonic algae, benthic algae, and metals. The agricultural irrigation component may cause the special site criterion to be exceeded.	Alt 3 - ●	2.5.1 Pesticide Control Program, 2.5.2 Control Program for Dissolved Copper Levels. ~~No feasible mitigation has been identified.~~

Response to Comment 92-9

Comment Summary: The comment states that the Draft EIR/EIS fails to consider the State CEQA Guidelines in establishing levels of significance for the purpose of designing mitigation strategies.

The comment may be referring to Appendix G of the CEQA Guidelines: Significant Effects. Section 15064(e) of the Guidelines introduces Appendix G as "Some examples of consequences which may be deemed to be a significant effect on the environment are contained in Appendix G." The examples in Appendix G are not intended to be the only criteria which may be used to determine significance, and the Guidelines acknowledge that "an iron clad definition of significant effect is not possible because the significance of an activity may vary with the setting" (Section 15064(b)).

CEQA Guidelines Appendix G examples were used in the development of criteria, and several criteria (e.g., Terrestrial Biological Resources, Cultural Resources) specifically cite the Guidelines as part of their justification. Other criteria are based on specific regulations, or other guidelines specific to the setting for the Project. Impact evaluation criteria and points of significance were developed for each impact that was analyzed in the Draft EIR/EIS (refer to Response to Comment 92-5). These evaluation criteria and points of significance are also used to evaluate whether proposed mitigation will reduce impacts to a level that is less than significant.

Response to Comment 92-10

Comment Summary: The comment states that the Draft EIR/EIS does not adequately consider the regulatory impediments to Alternative 3 (West County) posed by the Gulf of the Farallones National Marine Sanctuary and the Central Coast International Biosphere Reserve.

Regarding the feasibility of approving a West County alternative relative to the National Marine Sanctuary, refer to Response to Comment 69-6.

In addition, the special circumstances related to the Sanctuary are considered in the document in two evaluation criteria in the Draft EIR/EIS: Criterion 3 in Section 4.6 (page 4.6-63) and Criterion 6 in Section 4.9 (page 4.9 -37). This potential water quality impact is examined in detail for each of the Project components throughout Sections 4.6 and 4.9 of the Draft EIR/EIS.

Response to Comment 92-11

Comment Summary: The comment states that the Draft EIR/EIS identifies no feasible mitigation for Impacts 6.5.3 and 6.7.3 (impacts to the National Marine Sanctuary), 6.7.1 (dissolved copper in West County creeks), and 6.5.1 (dissolved oxygen, ammonia and hydrogen sulfide due to dam seepage).

The EIR/EIS authors do not agree with the portion of the comment which states that the Draft EIR/EIS does not provide mitigation for estero impacts. Measures that reduce Project impacts on the Sanctuary include Measures 2.2.1 through 2.2.12, 2.5.1 2.5.2, and 2.5.3 of the Draft EIR/EIS. Additional mitigation was considered and found to be infeasible, as described beginning on page 213 in Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS. With respect to the referenced impacts to West County streams, feasible mitigation has been identified in the Draft EIR/EIS for both Impact 6.5.1 (Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen, on page 2-125) and Impact 6.7.1 (Mitigation Measure 2.5.1: Pesticide Control Program, on page 2-121). Mitigation will reduce these impacts to a level below significance.

Response to Comment 92-12

Comment Summary: The comment states that mitigations must be identified or Alternative 3 should be discarded in the Final EIR/EIS as infeasible.

Refer to Responses to Comments 5-9, 92-11 and 92-91 .

Response to Comment 92-13

Comment Summary: The comment states that the Draft EIR/EIS fails to consider the effects of Point Reyes National Seashore Boundary study and federal legislation which would expand the Point Reyes national Seashore to include both the Estero de San Antonio and the Estero Americano, on the City's wastewater disposal plans. The comment also states that National Park Service jurisdiction over project areas and resources must be considered.

For a discussion of the proposed Point Reyes National Seashore Expansion, refer to Response to Comment 3-8, 3-9 and 3-10. In addition, it should be noted that the Point

Reyes National Seashore Boundary study recommends that only 500 acres of the proposed boundary expansion be acquired and that the National Park Service jurisdiction in the remaining portions of the expansion area be limited to acquisition and management of conservation easements on 24,000 acres.

Response to Comment 92-14

Comment Summary: The comment states that the Draft EIR/EIS fails to consider the implications of the federal Endangered Species Act with respect to permitting project elements and establishing effective mitigation measures.

Pages 20 and 21 in Appendix D-5 (Permitting Report) of the Draft EIR/EIS provide discussion of the federal Endangered Species Act and, specifically, Section 7 consultation. Tables 3 through 6 on pages 44 through 51 of Appendix D-5 list the applicable permits that would be required for each of the Project alternatives. Also, impacts to listed species are presented through evaluation of the following criteria: Criterion 1 in Section 4.8 (refer to page 4.8-72) and Criterion 1 in Section 4.9 (refer to page 4.9-36). Also refer to Response to Comment 1-6 concerning the status of coho salmon and to Master Response 12, located in Section 6-2 of this document, concerning the status of steelhead trout.

Response to Comment 92-15

Comment Summary: The comment states that the CEQA Guidelines require a finding of significance if the project will significantly affect rare or endangered animal or plant species or their habitat.

All impacts to rare, threatened or endangered species are identified in the Draft EIR/EIS, and mitigation is proposed. The criteria used as the basis for evaluating direct impacts to the species are listed in Response to Comment 92-14. These criteria were also used to evaluate impacts to occupied habitat of the listed species.

Response to Comment 92-16

Comment Summary: The comment contends that the Draft EIR/EIS does not adequately consider the issue of jurisdictional wetlands and does not clarify how wetlands were identified.

Section 4.10 of the Draft EIR/EIS, pertaining to jurisdictional wetlands resources, provides discussion on the following elements: Regulatory Environment (pages 4.10-2 through 4.10-10); Regional Wetlands Resources (pages 4.10-10 through 4.10-15); Regional Resource Planning Efforts (page 4.10-22); Geographic Area Resource Descriptions (pages 4.10-22 through 4.10-27); Evaluation Criteria with Points of Significance (page 4.10-27); Methodology (pages 4.10-28 through 4.10-32); Environmental Consequences and Recommended Mitigation (pages 4.10-32 through 4.10-54); and Cumulative Impacts (page 4.10-55). Additional information regarding

jurisdictional wetlands is provided within Appendices M-1 (Planning Level Wetlands Determination for Agricultural Irrigation Areas), M-2 (Wetland Determination and Mitigation for Pipeline Alignments Volume 1), and M-3 (Planning Level Wetland Determination Report for Reservoir Sites) of the Draft EIR/EIS.

Wetlands were initially identified using the methodology provided in the U.S. Army Corps of Engineers (Corps) 1987 *Wetland Delineation Manual*. Based on this methodology, an area had to meet specific criteria for hydrophytic vegetation, hydric soils, and wetland hydrology before being determined to be a jurisdictional wetland. These jurisdictional wetlands were then placed into more specific wetland habitat types (pages 4.10-11 through 4.10-21 of the Draft EIR/EIS) based on a vegetation classification system that incorporates systems developed by Holland 1986 and Shuford and Timossi 1989. This classification system was developed to more accurately reflect the wetland resources of the region. The Food Security Act Manual (Natural Resources Conservation Service 1994) was utilized to better define cultivated wetlands that continue to meet the Corps jurisdictional criteria. This classification system was developed through consultation with the Corps and the National Resources Conservation Service.

Response to Comment 92-17

Comment Summary: The comment states that the Draft EIR/EIS does not address Section 404 compliance issues related to jurisdictional wetlands.

The Draft EIR/EIS describes Project impacts on jurisdictional wetlands and mitigation for such impacts. After the EIR is certified, if an alternative is selected which requires wetlands fill, then a Section 404 application will be prepared. The application will reflect additional details that will be established in the Project selection and Project design phases. Refer to the EIR/EIS Timeline on page 1-8 of the Draft EIR/EIS. However, Page 1 in Appendix M-1 (Planning Level Wetlands Determination for Agricultural Areas), Page 1-1 in Appendix M-2 (Wetland Determination and Mitigation for Pipeline Alignments Volume I), and page 2-1 in Appendix M-3 (Planning Level Wetland Determination Report for Reservoir Sites), of the Draft EIR/EIS discuss Section 404 compliance issues, as do Pages 4.10-2 through 4.10-10 of the Draft EIR/EIS. Refer to Response to Comment 92-16 for additional information regarding Section 404 compliance.

Response to Comment 92-18

Comment Summary: The comment questions the long-term viability of created wetlands for mitigation.

Refer to Master Response 11, located in Section 6.2 of this document, regarding evaluation of mitigation feasibility.

Response to Comment 92-19

Comment Summary: The comment states that the Draft EIR/EIS was not adequately circulated for public review and that the cost of the document is prohibitive.

Refer to Master Response 3, located in Section 6.2 of this document, concerning cost and availability of the document.

Response to Comment 92-20

Comment Summary: The comment states that the availability of the Draft EIR/EIS at the advertised public locations was limited or non-existent.

Refer to Master Response 3, located in Section 6.2 of this document, concerning availability of the document. The comment is correct that the Sebastopol Library has only Volumes I, II, and III, rather than the entire document. The Library refused to accept the appendices because library staff stated they took up too much shelf space, and very few people had asked to read the Screening and Scoping Reports which they had stocked earlier. The comment is partially correct that the main branch of the Santa Rosa Library had trouble making the CD-ROM available. While some library staff were able to find the correct equipment and set up the CD-ROM for use by the public, other staff were unable to set up the CD-ROM.

Response to Comment 92-21

Comment Summary: The comment states that reservoir seepage would be pumped to the reservoir and that agricultural irrigation tailwater would be recaptured, but that mitigation and its impact are not described for either.

Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia and Dissolved Oxygen, on page 2-25 states that a system of wells will be installed, if monitoring indicates that there is a water quality problem. Monitoring will ensure effectiveness of the mitigation. Impacts of this mitigation are described in the Response to Comment 92-244.

Response to Comment 92-22

Comment Summary: The comment states that the Draft EIR/EIS fails to address mitigations for and biological impacts of elevated levels of salts in the wastewater.

The impact of changes in conductivity in the esteros was determined to be significant because any change in water quality is significant under the special sites criterion. Also, habitat changes due to the salinity changes have been found to be significant. (Refer to Impacts 9.5.6 and 9.7.6 on pages 4.9-68 and 4.9-78 respectively). However, there is no evidence that the minor changes in salinity are biologically meaningful. Refer to Response to Comment 12-16. Mitigation was determined not to be feasible because it is

not possible to manage irrigation so as to prevent any change at all in salinity. Salinity impacts on biota are also addressed in Response to Comment 92-237.

Response to Comment 92-23

Comment Summary: The comment states that the Draft EIR/EIS fails to address mitigations for and biological impacts of elevated levels of metals in surface flows of wastewater, as well as in percolate and subflow.

Only one metals-related significant water quality impact is identified; EPA objectives for dissolved copper will be exceeded in West County Creeks (Impact 6.7.1 on page 4.6-87). This impact is reduced below significance by Mitigation Measure 2.5.2: Control Program for Dissolved Copper Levels on page 2.123.

Ecological risk assessments were performed to evaluate the impact of metals and other toxic substances on organisms. The risk assessments did not show as significant increased risk due to metals (including copper in West County streams) for any organisms. However, a significant increased risk may be experienced by seals in the Russian River under the cumulative scenario (Project impacts plus other potential projects in the Russian River watershed). This increased risk is evaluated as Impact 9.9C on page 4.9-90, and is due for the most part to aluminum. Mitigation Measure 2.4.16: Ecological Risk Monitoring and Source Control Program discussed on page 2-119 will reduce the cumulative impact to a level below significance.

The water quality analysis and the ecological risk assessments include impacts of discharge, percolate, and subflow.

Response to Comment 92-24

Comment Summary: The comment states that Draft EIR/EIS fails to address mitigation for and biological impacts of diminished levels of dissolved oxygen resulting from anoxic conditions due to reservoir stratification.

Mitigation for diminished levels of dissolved oxygen in streams resulting from stratified storage reservoir seepage is included as Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen, on page 2-125 of the Draft EIR/EIS. With mitigation, impacts can be reduced to less than significant.

Response to Comment 92-25

Comment Summary: The comment cites an article from Cascadia magazine, which states that "Doctors say that blue baby syndrome can result when infants ingest nitrates in concentrations of as little as 10 parts per million [ppm, equal to 10 milligrams/liter] in their water, which is the maximum allowed under the Safe Drinking Water Act."

The source of this statement is not provided in the article. The article does not state, as the comment implies, that the Washington State study provides evidence that the

syndrome is occurring at 10 ppm. Consistent with current understanding of the syndrome, the article notes that many residential drinking water wells (46 percent) in the area where seven blue baby cases were reported exceeded the 10 ppm standard during the most recent period for which data are available. The EIR/EIS authors believe that the current drinking water standard for nitrate of 10 ppm (which was used as the point of significance for nitrate in drinking water supplies) is protective of human health and are aware of peer-reviewed studies that have reported no blue baby syndrome cases when nitrate levels were less than 10 ppm and only a small number (less than 2 percent of the total) of cases (usually associated with surface water contamination due to poor well construction) when nitrate levels were between 11 and 20 ppm. Compliance with the 10 ppm drinking water standard for nitrate is evaluated in the Draft EIR/EIS in Section 4.5, under Evaluation Criterion 2 (refer to page 4.5-21 and pages 4.5-27 through 4.5-56) and in Section 4.7, under Evaluation Criterion 1 (refer to page 4.7-25 and pages 4.7-35 through 4.7-63). A more complete discussion of this issue is included in Appendix J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water) of the Draft EIR/EIS.

Response to Comment 92-26

Comment Summary: The comment states that legislative efforts and lobbying by and on the behalf of the City of Santa Rosa in relation to federal clean water statutes should be addressed in the Draft EIR/EIS. The comment also states that if the Clean Water Act is weakened in response to the City of Santa Rosa efforts, then nationwide cumulative impacts should be addressed in the Draft EIR/EIS.

On pages 2-16 through 2-19 of the Draft EIR/EIS, listings of the applicable federal, state, regional, county, and local policies and regulations with which the Project components are required to comply are provided, including the Clean Water Act of 1977. Project components were developed to comply with the existing legislation and regulations. Future changes to policies and regulations cannot be anticipated by the Draft EIR/EIS, and such insupportable speculation is not the purpose of the document. The Project does not propose to make any changes to the Clean Water Act.

Response to Comment 92-27

Comment Summary: The comment states that the City of Santa Rosa's federal lobbying activity and expenditure reports in relation to water quality issues should be included in the Final EIR/EIS, and it refers to Attachment I (Comments 246 through 251), a collection of newspaper articles concerning the House of Representatives' 1995 vote to reauthorize the Clean Water Act.

There are no stipulations within NEPA or CEQA that require the inclusion of federal lobbying activity and expenditure reports within environmental documentation such as the Draft EIR/EIS or the Final EIR. This information is available to the interested public at the City of Santa Rosa offices or from the Clerk of the U.S. House of Representatives

and the Secretary of the U.S. Senate. The Project does not propose to make any changes to the Clean Water Act.

Response to Comment 92-28

Comment Summary: The comment states that the Draft EIR/EIS fails to document effects of combinations of project elements including multiple reservoirs within the same watershed, multiple irrigation operations within the same watershed, impacts of all mitigation measures within a single water shed, and destruction of multiple wetland sites within the same watershed.

The EIR/EIS authors do not concur with the comment; total project impacts of multiple components within a single watershed were evaluated throughout the Draft EIR/EIS, consistent with the Project description. Only one Project alternative (Alternative 2B) includes multiple reservoirs within the same watershed. For all of the West County alternatives only one of the five possible reservoir sites will need to be constructed. Any one West County reservoir will be sufficient to serve the entire West County Project. Two of the South County alternatives will require two reservoirs for the required storage capacity: Alternative 2B includes the Adobe Road and Lakeville Hillside reservoir sites; and Alternative 2D includes the Sears Point and Lakeville Hillside reservoir sites. The Lakeville Hillside and Adobe Road sites are both in the Petaluma River watershed, but the Sears Point reservoir is in the Tolay Creek watershed. For the two alternatives with two reservoirs the total impacts of reservoirs required for the Project are considered throughout the Draft EIR/EIS. This is shown, in the Summary of Impacts by Alternative at the end of each section. For example, Table 4.10-11 on page 4.10-59 shows acreage of wetland impacts by alternative and type, providing the total acreage affected by each alternative.

Impacts of irrigation assumed that as much irrigation as possible (up to 6,200 acres using the West County example) could be located in either the Stemple or Americano watershed. Although in actual practice the acreage might be split between the two watersheds, the Draft EIR/EIS analysis assumed that all could be concentrated in either watershed. Thus the total impacts of multiple irrigation operations in the same watershed are considered. Similarly, it was assumed that mitigation measures associated with agricultural irrigation could be concentrated in one watershed. Combined impacts of reservoir and irrigation components in the same watershed were also evaluated.

Response to Comment 92-29

Comment Summary: The comment states that the State CEQA Guidelines require an EIR to disclose significant impacts associated with growth-inducement or the depletion or degradation of ground water resources. The comment goes on to state that the Draft EIR/EIS fails to consider the growth-inducing impacts of providing a replacement potable water supply as compensation for damage to the water quality of domestic water wells in the West County.

Impact to groundwater resources are evaluated in Section 4.5 of the Draft EIR/EIS. Potentially significant impacts associated with storage reservoirs are identified in the discussion starting on page 4.5-30, and provision of new water supply to affected wells is proposed as mitigation in Mitigation Measure 2.3.12: Provide Replacement Water Supply for Affected Wells, and Mitigation Measure 2.3.13: Monitor Groundwater Levels and Provide Replacement Water Supply (refer to pages 2-85 and 2-87 respectively in the Draft EIR/EIS). An analysis of the potential growth-inducing impacts of providing new water infrastructure to affected domestic water well owners in the West County, as well as other portions of the Project area, has been provided on pages 5-10 and 5-11 of the Draft EIR/EIS. In summary, the analysis indicates that the new infrastructure will not result in the development of new residences on parcels with existing wells while the development of new residences on parcels that are currently vacant will be in accordance with the existing zoning and general plans. As a consequence, any development allowed by the provision of the new infrastructure will be growth-accommodating rather than growth-inducing.

Response to Comment 92-30

Comment Summary: The comment states that geologic hazards should be considered significant.

Significance criteria for geology, soils, and seismicity are presented in Table 4.3-6 on page 4.3-54 of the Draft EIR/EIS, which contains justification for each criterion. Seismic impacts are considered to be significant if a Project facility is located within an Alquist-Priolo earthquake fault zone, if facilities are within an area highly susceptible to liquefaction during an earthquake, if facilities do not meet seismic safety standards of the Division of Safety of Dams or applicable building codes, or if a Project element will induce seismicity.

None of the proposed West County facilities is within an Alquist-Priolo earthquake fault zone. Some pipelines and pump stations for the West County Alternative will be located in areas rated high for liquefaction; thus this impact is considered significant without mitigation. Measures to design facilities to stabilize soils prone to liquefaction are thus included in the Project (refer to Mitigation Measure 2.3.5: Liquefaction Stabilization Design on page 2-67 of the Draft EIR/EIS). This measure will reduce impacts to less than significant. All facilities will be designed to meet applicable seismic safety standards, and none of the West County Project elements will induce seismicity, so the last two impacts were concluded to be not significant. Thus, there is one significant impact - liquefaction, which can be mitigated. With mitigation included in the Project design, people and structures will not be exposed to major geologic hazards.

Response to Comment 92-31

Comment Summary: The comment states that the Draft EIR/EIS fails to identify effective mitigation measures for identified archaeological resources for several of the proposed reservoir sites.

Mitigation Measure 2.3.18: Identification and Evaluation of Cultural Resources, on pages 2-95 through 2-97 of the Draft EIR/EIS, sets forth the performance standards for treatment of cultural resources affected directly or indirectly by the Project. All identified cultural resources within the preferred alternative will be evaluated for eligibility to the National Register of Historic Places. Those resources found eligible for inclusion to the National Register may require the development of a data recovery work plan. A Memorandum of Agreement (MOA) between the U.S. Army Corps of Engineers, the City of Santa Rosa, the State Office of Historic Preservation, and the Advisory Council on Historic Preservation will be executed and will set out the specific steps for avoiding or reducing harm to cultural resources.

For clarification, Table 1-8 on page 1-40 of the Draft EIR/EIS, which is referenced by the comment, provides the numbers of known cultural resources that may be impacted directly or indirectly by each Project alternative, not just the referenced storage reservoir site. Thus, the number of known cultural resources identified for Alternative 3A, which includes the Two Rock storage reservoir site, includes resources impacted by proposed pipeline routes, pumpstations, and irrigation areas as well.

Response to Comment 92-32

Comment Summary: The comment states that the Draft EIR/EIS fails to address impacts from project components that have the potential to substantially interfere with the movement of resident or migratory wildlife as is required by the State CEQA Guidelines.

Pages 4.8-95 and 4.8-96 of the Draft EIR/EIS address potential impacts to major terrestrial wildlife migration or travel corridors and identify that no impacts will occur since no major migration or travel corridors are associated with the proposed reservoir sites. In addition, pages 4.9-69 and 4.9-70 of the Draft EIR/EIS address potential impacts to major aquatic wildlife migration or travel corridors and identify that no impacts will occur at any of the proposed reservoir sites except the Carroll Road storage reservoir site. An impact was identified for the drainage associated with this proposed reservoir site on the basis of three steelhead trout that were observed in the drainage. However, since the resource agencies have not identified any known major migration or travel corridor associated with this drainage and only three steelhead trout were observed in the drainage, this impact was not considered to be significant. For an update on status of steelhead refer to Master Response 12, located in Section 6.2 of this document.

Response to Comment 92-33

Comment Summary: The comment states that extensive technical comments on specific sections of the Draft EIR/EIS are enclosed with Comment Letter 92.

Specific concerns were expressed in the referenced subsequent comments and each comment is addressed specifically in the Responses to Comments below.

Response to Comment 92-34

Comment Summary: The comment states that the grouping of comments for generic response or the use of "comment noted" is not considered to provide adequate response to the Draft EIR/EIS comments.

All comments on the Draft EIR/EIS have been addressed. Several Master Responses have been written to respond to issues that arise frequently (refer to the Master Responses in Section 6.2 of this document). The term "comment noted" has not been used in responding to comments on the Draft EIR/EIS.

Response to Comment 92-35

Comment Summary: The comment consists of a list of attachments to Comment Letter 92.

The attachments are addressed in the subsequent responses.

Response to Comment 92-36

Comment Summary: The comment states that the enclosed comments are submitted on behalf of Friends of the Esteros/Environmental Action of West Marin on the Notice of Intent for the Santa Rosa Subregional Long-term Wastewater Project. The comments supplement the oral testimony given at the public scoping hearing on November 17, 1994. Attached technical comments are also part of the submittal.

Specific concerns were expressed in subsequent comments and these comments are addressed specifically in the Responses to Comments below.

Response to Comment 92-37

Comment Summary: The comment states that there has been a lack of legal compliance in the environmental documentation process for the Santa Rosa Subregional Long-term Wastewater Project. Specifically, there has been non-compliance with the NOP, NOI, and the hearing process conducted on November 17, 1994.

The comment refers to four process areas described in Comments 92-38 through 92-41. Refer to Responses to Comments 92-38 through 92-41.

Response to Comment 92-38

Comment Summary: The comment states that the NOI is inadequate because it does not include the ocean outfall alternative.

The ocean outfall is not under consideration, so it is not necessary to republish the NOI or to take any of the other suggested actions. Also, refer to Response to Comment 92-3.

Response to Comment 92-39

Comment Summary: The comments states that the NOP is inadequate because it does not include the ocean outfall alternative.

The ocean outfall is not under consideration, so it is not necessary to republish the NOP or to take any of the other suggested actions. Also refer to Response to Comment 92-3.

Response to Comment 92-40

Comment Summary: The comment states that there was inadequate time to comment on the proposed scope of work for the Draft EIR/EIS, and that the scope was incomplete because it did not include the ocean outfall.

The time limit for accepting public comment on the Scoping Report was extended from December 5, 1994 to December 14, 1994. The time period allowed for scoping was in compliance with NEPA and CEQA requirements. The ocean outfall option is not under consideration.

Response to Comment 92-41

Comment Summary: The comment states that the preliminary scoping report fails to include the ocean outfall option.

The ocean outfall is not under consideration, so it is not necessary to revise the scoping report to include study of this alternative.

Response to Comment 92-42

Comment Summary: The comment contends that agencies did not have adequate opportunity to comment on the ocean outfall alternative.

Project alternatives that have been carried forward for analysis in the Draft EIR/EIS were disclosed in the NOP, NOI, and supporting documents. The ocean outfall was not carried forward as an option.

Response to Comment 92-43

Comment Summary: The comment requests that the City of Santa Rosa and the US Army Corps of Engineers initiate and re-notice an orderly scoping process which makes a reasonable attempt to comply with the applicable statutes.

The scoping process that was conducted for the Santa Rosa Subregional Long-term Wastewater Project EIR/EIS is described on pages 1-12 and 1-13 of the Draft EIR/EIS. The Draft EIR/EIS describes a process that involved identifying and evaluating solutions to the existing wastewater disposal problem that had previously been proposed through other environmental processes as well as all solutions suggested through the extensive

public involvement program developed for this Draft EIR/EIS. The evaluation and screening of each of these solutions (i.e., alternatives) resulted in a final set of alternatives to be fully evaluated in the Draft EIR/EIS. No preferred alternative was selected. A determination of the analysis needed to evaluate each of these alternatives was then conducted as part of the public involvement program. Therefore, the public has already had substantial opportunity to ensure that all issues that need to be addressed by the Draft EIR/EIS are analyzed in the document. Refer to Responses to Comments 92-38 through 92-42 regarding alleged inadequacies in the scoping process. The commentor does not indicate which statutes applicable to the scoping process have not been followed. Therefore no further response can be provided.

Response to Comment 92-44

Comment Summary: The comment states that the enclosed comments are submitted on behalf of Friends of the Esteros/Environmental Action of West Marin on the Notice of Intent for the Santa Rosa Subregional Long-term Wastewater Project. The comments supplement the oral testimony given at the public scoping hearing on November 17, 1994. Attached technical comments are also part of the submittal.

Specific concerns were expressed in subsequent comments and these comments are addressed specifically in the Responses to Comments below.

Response to Comment 92-45

Comment Summary: The comment contends that the NOP and NOI did not comply with NEPA and CEQA requirements, and refers to subsequent comments.

Specific comments are addressed in Responses to Comments 92-46 through 92-50.

Response to Comment 92-46

Comment Summary: The comments states that the NOP is inadequate because it does not include the ocean outfall alternative.

The ocean outfall is not under consideration, so it is not necessary to republish the NOP or to take any of the other suggested actions. Also refer to Response to Comment 92-3.

Response to Comment 92-47

Comment Summary: The comment states that the NOI is inadequate because it does not include the ocean outfall alternative.

The ocean outfall is not under consideration, so it is not necessary to republish the NOI or to take any of the other suggested actions. Also refer to Response to Comment 92-3.

Response to Comment 92-48

Comment Summary: The comment states that there was inadequate time to comment on the proposed scope of work for the Draft EIR/EIS, and that the scope was incomplete because it did not include the ocean outfall.

Public comment on the Scoping Report was accepted until the end of the Scoping Period on December 14, 1994. The time period allowed for scoping was in compliance with NEPA and CEQA requirements. The ocean outfall option is not under consideration.

Response to Comment 92-49

Comment Summary: The comment states that the preliminary scoping report fails to identify the ocean outfall.

The ocean outfall is not under consideration, so it is not necessary to revise the scoping report to include study of this alternative. Also refer to Response to Comment 92-3.

Response to Comment 92-50

Comment Summary: The comment contends that agencies did not have adequate opportunity to comment on the ocean outfall alternative.

Project alternatives that have been carried forward for analysis in the Draft EIR/EIS were disclosed in the NOP, NOI, and supporting documents. The ocean outfall was not carried forward as an option.

Response to Comment 92-51

Comment Summary: The comment requests notification of a new scoping process.

A new scoping process is not required. Refer to Responses to Comments 92-45 through 92-50.

Response to Comment 92-52

Comment Summary: The comment consists of an article from Cascadia Magazine, August 1996, entitled "Blue Babies, Hot Potatoes," accompanying Comment Letter 92 as Attachment C.

The article was submitted in support of Comment 92-25. Refer to Response to Comment 92-25.

Response to Comment 92-53

Comment Summary: The comment consists of an introduction of the commentator at the September 24, 1996 Public Hearing on the Draft EIR/EIS.

Specific concerns were expressed in subsequent comments and in the referenced written comments. These comments are addressed specifically in the Responses to Comments to Letter 92.

Response to Comment 92-54

Comment Summary: The comment states that there was a lack of ready public access for the purpose of reviewing the Draft EIR/EIS.

Refer to Master Response 3, located in Section 6.2 of this document, concerning availability of the document.

Response to Comment 92-55

Comment Summary: The comment states that the Draft EIR/EIS document and the CD-ROM version were too costly for the average member of the public and that the purpose of the CEQA and NEPA statutes concerning the preparation and circulation of the Draft EIR/EIS were defeated.

Refer to Master Response 3, located in Section 6.2 of this document, concerning the cost of the document.

Response to Comment 92-56

Comment Summary: The comment asks how many of the participants at the hearing paid $120 for the Draft EIR/EIS or the CD-ROM.

Refer to Master Response 3, located in Section 6.2 of this document, for a listing of those who purchased the Draft EIR/EIS and the CD-ROM.

Response to Comment 92-57

Comment Summary: The comment states that all volumes of the Draft EIR/EIS were not available at the specific public libraries, as advertised by the City.

Refer to Master Response 3, located in Section 6.2 of this document. Also, refer to Response to Comment 92-20. Because the comment does not specify any library that did not have the document as advertised a more specific response beyond that provided is not possible.

Response to Comment 92-58

Comment Summary: The comment states that there has been no valid public circulation of the Draft EIR/EIS because of its prohibitive cost and the inadequate number of volumes in the libraries closest to the project impact areas.

Refer to Master Response 3, located in Section 6.2 of this document, concerning cost and availability of the document.

Response to Comment 92-59

Comment Summary: The comment states that Draft EIR/EIS asks the wrong question and goes on to state that the question should be "what kind of world do we want and what will nature require of us?"

Deliberations on these questions are not the purpose of the Draft EIR/EIS. The Draft EIR/EIS is prepared according to the requirements of NEPA and CEQA. In summary, these requirements are to assess a reasonable range of alternatives, provide a full discussion of the significant environmental impacts associated with each alternative, and to inform the decision-makers and public of Project measures that will avoid or minimize adverse impacts.

Response to Comment 92-60

Comment Summary: The comment states that in no measure does the Draft EIR/EIS ever seek to explore the ultimate carrying capacity of the Santa Rosa plain to support increasing urbanization. The Draft EIR/EIS refers only to the general plan buildouts, many of which will be nearly upon us by the time this project is built. A good question to ask might be "Then what?"

Each adopted general plan was developed in compliance with CEQA. The analysis of the impacts associated with buildout of these general plans has therefore been conducted and evaluated by the decision-makers as being accurate. The Draft EIR/EIS for the Santa Rosa Subregional Long-term Wastewater Project therefore assumes that these analyses are also valid for the purposes of this Project. These analyses are valid for the planning horizon that is indicated in the general plan. It is the responsibility of the city or county to determine when the general plan is no longer accurate or does not serve the population it was intended to address.

Response to Comment 92-61

Comment Summary: The comment states that the Draft EIR/EIS fails to provide a meaningful ecological risk assessment from which decision-makers and the public can draw realistic conclusions.

The comment fails to identify how the analysis provided by the ecological risk assessment is inaccurate or omits important information. Therefore, it does not provide any substantial basis for reevaluation of the risk assessment set forth in Appendix K-4 of the Draft EIR/EIS.

Response to Comment 92-62

Comment Summary: The comment states that creating the illusion of accumulating a lot of data does not mean that the Draft EIR/EIS has created a framework for resolving the fundamental questions surrounding the project or for making a rational collective decision about which components to discard or adopt.

The comment does not provide any specific information that suggests that analyses provided in the Draft EIR/EIS are inaccurate or have been omitted. No more specific response can therefore be provided.

Response to Comment 92-63

Comment Summary: The comment indicates that the Draft EIR/EIS identifies arbitrary evaluation criteria and points of significance and provides hypothetical mitigation that cannot feasibly reduce the identified impacts to a level that is less than significant.

Refer to the Responses to Comments 92-5 and 92-9.

Response to Comment 92-64

Comment Summary: The comment states that the Draft EIR/EIS focuses on developing mitigation measures that have skewed the cost-benefit analysis and the assessment of environmental impacts of the evaluated alternatives. This focus makes rational comparison of the merits and disadvantages of the alternatives virtually impossible.

One of the primary purposes of the Draft EIR/EIS is to identify mitigation measures that can avoid or reduce impacts. A focus in the EIR/EIS on mitigation is appropriate and does not skew the analyses because all potentially significant impacts for each of the alternatives are analyzed for possible mitigation..

Response to Comment 92-65

Comment Summary: The comment is understood as saying that impacts of Project components on habitats located downstream of discharges or other project elements were "generally dismissed" and that "little is said" about them.

The authors of the Draft EIR/EIS disagree with this characterization. Appendices I-1, I-2, I-8, I-11, I-13, I-16, I-17, I-18, K-4, L-1, L-2, L-7, M-1, and M-2 of the Draft EIR/EIS describe impacts on habitats downstream of the project area. Furthermore, numerous significant impacts were identified in such downstream environments (i.e., Russian River, esteros, creeks), and this is not consistent with the assertion in the comment that such impacts were "generally dismissed."

Response to Comment 92-66

Comment Summary: The comment references "Blue Baby Syndrome", and states that the Draft EIR/EIS fails to consider nitrate impacts, which may result from wastewater storage or spraying or by the application of fertilizers on crops, on domestic drinking water wells in the shallow perched water table in the Two Rock/Bloomfield/Valley Ford area.

These issues are addressed in Appendices H-1 (Hydrogeology of Storage/Reuse Areas and Evaluation of Potential Impacts to Groundwater) and H-5 (Irrigation Nitrogen Loading to Groundwater) and are summarized in Section 4.5 of the Draft EIR/EIS. Nitrogen effects from irrigation water were found to be less than significant. Mitigation has been proposed at reservoir sites where nitrogen effects were found to be significant. Refer also to Response to Comment 92-25.

Response to Comment 92-67

Comment Summary: The comment states that the impact of pesticides on the National Marine Sanctuary has not been evaluated.

The potential effect of agriculturally applied pesticides on the National Marine Sanctuary is evaluated on page 6-24 in Appendix K-4 (Ecological Risk Assessment) of the Draft EIR/EIS, and the impact is considered to be less than significant.

Response to Comment 92-68

Comment Summary: The comment states that the issue addressed by Comment 92-67 is but one example of significant deficiencies in the range of questions which have been asked by the preparers of the Draft EIR/EIS. In addition, the comment states that there are pitfalls for decision-makers which have been created by the deceptively reassuring answers (i.e., all impacts are either less than significant or can be mitigated) provided by the Draft EIR/EIS.

The comment does not accurately portray the conclusions of the Draft EIR/EIS. Analyses concluded that there were a number of significant impacts, and that many of them could not be mitigated to a level below significance. Refer to Table 1-13, which summarizes significant impacts and mitigation, starting on page 1-45 of the Draft EIR/EIS.

Response to Comment 92-69

Comment Summary: This comment states that the Draft EIR/EIS does not offer a reasonable look at the real world and that the document feeds the "colonizing mind."

The EIR/EIS authors believe that the document provides an accurate and reasonable portrayal of the existing environment and potential environmental impacts. Because the comment does not provide any further specifics regarding alleged inadequacies, a more specific response is not possible. Also refer to Response to Comment 92-69.

Response to Comment 92-70

Comment Summary: The comment consists of a copy of the Tomales Bay/Bodega Bay Watershed Boundary Study, July 1995, accompanying Comment Letter 92 as Attachment E.

The study is apparently submitted in support of Comment 92-13. Refer to Responses to Comments 3-8 and 92-13.

Response to Comment 92-71

Comment Summary: The comment consists of a copy of the California Department of Fish and Game (1977) report, The Natural Resources of Esteros Americano and de San Antonio, accompanying Comment Letter 92 as Attachment F.

The report appears to be submitted as general information in support of overall comments regarding the esteros. The referenced report was used by the EIR/EIS authors as source material for the description of the esteros. It is referenced in the Reference sections of Sections 4.9 (Aquatic Biological Resources) and Appendix L-4 (Aquatic Habitat Survey Results) of the Draft EIR/EIS.

Response to Comment 92-72

Comment Summary: The comment consists of a copy of the U.S. Army Corps of Engineers publication Explore 4: The California Coastline, Arena Cove to the Golden Gate, accompanying Comment Letter 92 as Attachment G.

The publication is submitted in support of Comment 92-143. Refer to Response to Comment 92-143.

Response to Comment 92-73

Comment Summary: The comment states that the discussion of the Pacific Ocean is superficial and that multiyear studies of ocean currents are needed.

The authors of the Draft EIR/EIS do not agree that a multi-year study of Pacific Ocean hydrodynamics is necessary to comply with NEPA or CEQA. A description of the Pacific Ocean is provided because it borders on environments that will be affected by Project alternatives (i.e., the Russian River and the esteros). However no measurable effects on the ocean are projected, so a detailed characterization was not deemed necessary. Refer to Response to Comment 3-6. Also refer to Master Response 5, located in Section 6.2 of this document.

Response to Comment 92-74

Comment Summary: The comment states that criteria for Areas of Special Biological Significance should be identified, and that the Draft EIR/EIS does not mention the Monterey Bay National Marine Sanctuary.

Criteria for special sites, such as the Areas of Special Biological Significance and Sanctuary are described on page 4.6-66 of the Draft EIR/EIS. The Monterey Bay National Marine Sanctuary and other sanctuaries under NOAA's jurisdiction are not mentioned in the Draft EIR/EIR because of their great distance from the affected Project area. Refer to Response to Comment 3-6.

Response to Comment 92-75

Comment Summary: The comment states that the rationale for the cessation of manipulation of the sand bar at the mouth of the Estero Americano should be discussed in the document.

The rationale for any decision by the manager of the Gulf of the Farallones National Marine Sanctuary to no longer allow movement of sand at the Estero Americano inlet is not known to the authors of the Draft EIR/EIS. The rationale does not appear relevant to the analysis of Project impacts.

Response to Comment 92-76

Comment Summary: The comment states that the Draft EIR/EIS fails to indicate how coastal processes would affect wastewater entrainment with the [esteros] during different tidal cycles.

Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS is devoted to the subject of estero impacts over a range of tidal and flow conditions. The model described in Appendix I-11 is used as a basis for the analysis starting on page 174 of Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) and Figures 6.1 through 6.5 in Appendix I-17 (Water Quality Impact Analysis Report Volume II - Figures) of the Draft EIR/EIS.

Response to Comment 92-77

Comment Summary: The comment states that the Draft EIR/EIS fails to describe the rationale for the Regional Board policy regarding impacts on an Area of Special Biological Significance (ASBS).

The Regional Board policy is described on page 4.6-66 of the Draft EIR/EIS. The EIR/EIS authors do not know the rationale for the policy; presumably, the policy was adopted in recognition of the purpose of the Area of Special Biological Significance, as explained on that page: "to protect an unusual site".

Response to Comment 92-78

Comment Summary: The comment states that the basis for concern about ammonia should be explained in the EIR/EIS and that feasible mitigation for ammonia impacts from reservoirs is needed.

Feasible mitigation is included in the Draft EIR/EIS as Mitigation Measure 2.5.3: Control of Hydrogen Sulfide, Ammonia, and Dissolved Oxygen on page 2-125.

For clarification, the following change is made to the Draft EIR/EIS:

Page 4.6-67. The third paragraph is revised as follows:

> The quality of reclaimed water that may seep from reservoirs is not necessarily the same as that described in Table 4.6-1 on page 4.6-6 since biological activity in a thermally stratified storage reservoir affects reclaimed water quality. In particular, dissolved oxygen can depleted, nitrate can be converted to ammonia, and sulfur compounds can be converted to hydrogen sulfide in the bottom layer of a thermally stratified reservoir. Thermal stratification can exist from mid-spring through summer. For purposes of the surface water quality impacts analysis, maximum ammonia and hydrogen sulfide formation was assumed because ammonia is of more concern for aquatic biota than nitrate. The reason for this higher level of concern is that ammonia is toxic to aquatic life, but nitrate is not. The groundwater impacts evaluation assumed that nitrate levels in reclaimed water are not reduced by conversion to ammonia, because drinking water standards for nitrate are the primary concern for groundwater.

Response to Comment 92-79

Comment Summary: The comment states that the Draft EIR/EIS provides no indication of the progress toward attainment of the Regional Board's ammonia load reduction goal. The comment also states that "there is evidence that loading of certain wastestream constituents has increased at Kelly Pond between 1991 and 1994 studies," and asks for evidence that "future urban growth and industrial hookups may actually increase the incremental loading of specific compounds."

The Regional Board established an ammonia load reduction goal for sources in the Laguna. The Regional Board's 1995 estimate of existing loads and load reduction goals for sources in the Laguna are described in Table 4-25 on page 133, in Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS. The Regional Board estimate of loads was used because it is recent relative to the timeframe of impacts analysis (early 1996) as reflected in Appendix I-16. The evaluation of ammonia load mitigation on page 132 in Appendix I-16 shows that if the load reduction goals are fully met, then the mitigation remains feasible. The cumulative impacts analysis beginning on page 160 in Appendix I-16 evaluates Project impacts under conditions of ammonia load reduction goal attainment.

Progress toward attainment of the ammonia load has been evaluated. Table 4-25 in Appendix I-16 of the Draft EIR/EIS shows that the load from sources other than reclaimed water discharges is 116,911 pounds per year, and that septic systems, agriculture and urban runoff are responsible for 44, 34 and 17 percent, respectively, of the 116,911-pound annual load. No new programs have been implemented by the County of Sonoma or cities that would cause a change in the septic systems and urban runoff loads since the Regional Board's 1995 estimate. Federal 319(h) and City funds are currently being expended on approximately five dairies to control the dairy load, and two of 31 dairies in the Laguna watershed are no longer in business. The magnitude of the ammonia load reduction has not been estimated by the Regional Board (Dennis Salisbury, personal communication December 16, 1996). The current Subregional System load is 56,610 pounds per year, and no progress has been made toward load reduction since the Regional Board's 1995 estimate.

The impact of existing reclaimed water on Kelly Farm Demonstration Wetland (KFDW) is evaluated in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS as a basis for evaluating impacts on similar aquatic systems affected by the Project. However, the Kelly Farm Demonstration Wetland is not part of the Project. The future load of water quality constituents to the Laguna de Santa Rosa is dependent on the constituent concentration and flow. The potential for constituent concentration changes is evaluated on page 158 in Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS, and no change is expected. Changes in reclaimed water discharge are a fundamental difference among alternatives, and impacts of such changes on the receiving water environment are evaluated in Sections 4.4, 4.6, 4.7 and 4.9, and Appendices I-16, J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water), and K-4 (Ecological Risk Assessment) of the Draft EIR/EIS.

Response to Comment 92-80

Comment Summary: The comment asserts that the Headworks Expansion Component is not adequately treated in the Draft EIR/EIS because once the expanded headworks is in place, significant additional urban growth in the region could be accommodated by the increased front end capacity provided by the headworks expansion.

The comment is incorrect in its assertion that the Headworks Expansion Component will accommodate significant additional growth in the region. The Headworks Expansion Component, as described in Section 3.3 of the Draft EIR/EIS will not accommodate growth beyond that included in the General Plans (in effect as of April 1994) of the member entities of the Subregional System, which is the stated purpose of the Project. Section 3.3 of the Draft EIR/EIS (page 3.3-4) states that the capacity of the headworks expansion is based upon the design capacity of 21 million gallons per day (mgd) for the Project, which is the capacity necessary to provide for buildout of the General Plans. The entire treatment plant and Subregional System facilities described in this Draft EIR/EIS are designed for this 21 mgd capacity. The issue of growth inducement is also addressed in Section 5.3 of the Draft EIR/EIS.

Response to Comment 92-81

Comment Summary: The comment asserts that the Draft EIR/EIS is inadequate because it fails to identify the need for a California Department of Fish and Game stream crossing permit for the soil disturbance in the construction of pipeline stream crossings.

This permit is listed in Table 3.6-1 (page 3.6-6), of Section 3.6 of the Draft EIR/EIS which identifies the potentially applicable permits and approvals for the Project.

Response to Comment 92-82

Comment Summary: The comment states that the discussion of Impact 6.4.1 is inadequate because the effectiveness of mitigation is not evaluated under high winter flow conditions.

The EIR/EIS authors consider Impact 6.4.1 on page 4.6-77 of the Draft EIR/EIS to be reduced to less than significant with implementation of Measure 2.2.5: Avoid Sensitive Biological Resources, on page 2-28 of the Draft EIR/EIS. Restoration of trench backfill as described in Measure 2.2.5 is a recognized construction technique and is considered an effective mitigation by the EIR/EIS authors.

Response to Comment 92-83

Comment Summary: The comment questions the assumption in the Draft EIR/EIS that the reservoirs can "spill water only in the winter.... during rare and very large storm events." Also, the comment states that the Draft EIR/EIS fails to address the possible need for emergency drawdown of the reservoir for repairs.

It is important to recognize a fundamental difference between the proposed reservoir for storage of reclaimed water for the Long-Term Project and other reservoirs (not this Project) for storage of potable water or for flood control. The Project reservoirs sites were purposely located partially for their small watershed areas. They will be filled primarily by pumped reclaimed water (which will be controlled by the operators), not by natural runoff (which is not controlled). As a result, if properly managed, the reservoirs should never spill water.

The highest risk of spilling occurs in late winter/early spring, when system storage reaches maximum level in anticipation of the start of the next irrigation season. However, if an intense and prolonged storm event occurs at this time, discharge to the Russian River system by controlled releases from the Laguna ponds (within the permitted discharge limits) will eliminate the risk of spilling from the reservoir. Because the reservoir is routinely emptied at the end of each irrigation season, regular repair and maintenance activities can occur at that time, without the need for reservoir drawdown using the spillway.

According to the State Department of Water Resources regulations, the reservoir must be designed to allow for emergency drawdown (by gravity flow) of at least half its volume within 7 days. It was anticipated that the reservoir outlet conduit and control works will be designed to accommodate this flowrate. If an emergency drawdown became necessary, the reservoir outlet works, not the spillway, will be used. This outlet into the creek, similar to the spillway outlet, will also include energy dissipation features including riprap rock to dissipate hydraulic energy and limit streambed scour.

Response to Comment 92-84

Comment Summary: The comment states that no mitigation for storage-caused water quality changes in the esteros is suggested in the Draft EIR/EIS.

Refer to Response to Comment 92-91 regarding mitigation proposed for impacts to the esteros. Additional potential mitigation was considered (and found to be infeasible) on page 213 in Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS.

Response to Comments 92-85 and 92-86

Comment Summary: The comment states that Mitigation Measure 2.5.3 is "hypothetical, unproven and experimental."

The EIR/EIS authors disagree with the characterization that Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen, on page 2-125 of the Draft EIR/EIS is "hypothetical, unproven and experimental." Containment and extraction of groundwater plumes using a network of extraction wells is a recognized and proven practice. Regulatory agencies routinely approve this technology to comply with contaminated groundwater cleanup requirements.

Response to Comment 92-87

Comment Summary: The comment states that the Draft EIR/EIS acknowledges that irrigation tail water runoff may reach waterways and that it fails provide evidence that the impact is insignificant and that runoff will last only 12 hours.

The comment incorrectly characterizes the analysis of agricultural irrigation impacts on page 4.6-85 of the Draft EIR/EIS as being caused by "irrigation tail water runoff." "Irrigation tail water" is considered to be runoff from routine, planned irrigation application, and such runoff is precluded by Measures 2.2.1 and 2.2.3 on pages 2-21 and 2-23 of the Draft EIR/EIS. The analysis on page 4.6-85 of the Draft EIR/EIS addresses the impact of the occasional malfunction of irrigation equipment that will likely occur. This scenario is described on page 3.3-40 of the Draft EIR/EIS. The assumption that the irrigation equipment would malfunction for 12 hours that is made on pages 4.4-29 and 4.6-85 of the Draft EIR/EIS is based on the expectation that irrigation facilities are adjusted daily. Using the 34,000-gallon quantity defined on page 3.3-40 of the Draft

EIR/EIS, a 12-hour event will result in a 0.1 cfs flow in a local stream. The comment suggests that longer duration events could occur. However, a longer event will result in flows of less than 0.1 cfs because the quantity will be spread out over a longer time period and therefore is also considered to have a less than significant impact.

The following change is made to the Draft EIR/EIS:

Page 3.3-40. The second paragraph is revised as follows:

> . . . incidences involved runoff to waterways, the remainder involved ponding or contained runoff (i.e., runoff that did not discharge to surface waters). The maximum volume of runoff reported was 34,000 gallons. The majority of incidences involved runoff or ponding of less than 1,000 gallons. The duration of the runoff event is not typically reported; however, good irrigation management practices generally involve daily inspection of irrigation facilities. A 12-hour irrigation equipment malfunction is considered appropriate in light of irrigation management practices that will be in place (see Measures 2.2.1 and 2.2.3 on pages 2-21 and 2-23).

Response to Comment 92-88

Comment Summary: The comment states that the Draft EIR/EIS offers no proven mitigation for control of irrigation percolate subflow.

Measures 2.2.1 and 2.2.3 on pages 2-21 and 2-23 of the Draft EIR/EIS identify specific irrigation practices that minimize the effect of irrigation on flow in adjacent surface waters. Appendix D-19 (Irrigation Management Guidelines for the West County and South County Alternatives) of the Draft EIR/EIS provides a detailed description of the specified irrigation practices, and the description of Measure 2.2.3 cites the basis of the irrigation management practices as being the American Society of Agronomy (ASA) and the United Nations Food and Agriculture Organization (FAO). The comment does not indicate which aspects of Appendix D-19 and the ASA and FAO practices it believes to be unproven. The EIR/EIS authors consider the practices to be feasible and effective based on experience and review of the ASA and FAO documentation.

Response to Comment 92-89

Comment Summary: The comment states that no effective mitigation of copper impacts to Americano Creek is identified.

Refer to Response to Comment 92-90.

Response to Comment 92-90

Comment Summary: The comments states that no effective mitigation of copper impacts to Stemple Creek is identified.

The EIR/EIS authors disagree with the comment that the effectiveness of mitigation for irrigation impacts of copper on West County creeks has not been demonstrated. The effect of irrigation on copper was evaluated in terms of the copper concentration resulting from the Project. If the estimated copper concentration that results from the Project exceeds the point of significance, the impact is considered to be significant. The concentration of copper is dependent on the quantity (mass) of copper resulting from the Project that reaches the local stream, the flow in the stream available for dilution, and background copper concentration in the stream. As indicated on page 186 of Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS, these factors were included in the analysis. Mitigation Measure 2.5.2: Control Program for Copper Levels, on page 2-123 of the Draft EIR/EIS will reduce the mass of Project copper that reaches the stream by reducing the irrigation acreage in the watershed. The EIR/EIS authors consider the mitigation to be appropriate and effective.

Response to Comment 92-91

Comment Summary: The comment states that the Draft EIR/EIS does not adequately consider the regulatory impediments to implementation of Alternative 3 that are posed by the National Marine Sanctuary. The comment also states that the Draft EIR/EIS fails to provide mitigation for estero impacts.

The special protection afforded the esteros and other parts of the Gulf of the Farallones National Marine Sanctuary is described on page 4.6-66 and page 4.9-35 of the Draft EIR/EIS, and page 54 in Appendix I-12 (Development of Evaluation Criteria for Potential Water Quality Impacts) of the Draft EIR/EIS. The regulatory requirements for implementation of Alternative 3 components are identified in the Appendix D-5 (Permitting Report) of the Draft EIR/EIS. Nonetheless, the EIR/EIS authors agree that a more definitive statement about the Sanctuary should be added to Section 4.6 of the Draft EIR/EIS.

Therefore, the following changes are made to the Draft EIR/EIS:

Page 4.6-5. A new section is added after the Inland Water Regulation and before the Ocean Water Regulation sections

> ***The Esteros and the National Marine Sanctuary***
>
> The Esteros and Bodega Bay are part of the Gulf of the Farallones National Marine Sanctuary. Sanctuary regulations are given in 15 CFR 936 and 15 CFR 922. The sanctuary is administered by the National Oceanic and Atmospheric Administration (NOAA), which is part of the United States Department of Commerce.

The EIR/EIS authors disagree with the portion of the comment which asserts that the Draft EIR/EIS does not provide mitigation for estero impacts. Measures that reduce Project impacts on the Sanctuary include Measures 2.2.1 through 2.2.12, 2.5.1 2.5.2, and

2.5.3 of the Draft EIR/EIS. Additional potential mitigation was considered (and found to be infeasible) on page 213 in Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS. Also refer to Response to Comment 92-8.

Response to Comment 92-92

Comment Summary: The comment states that mitigation must be identified for significant impacts associated with Alternative 3 or the alternative must be discarded.

This comment reflects an opinion that is inaccurate. Refer to Response to Comment 5-9 for an explanation of alternatives analysis, and why an alternative with significant and unavoidable impacts may be selected and approved.

Response to Comment 92-93

Comment Summary: The comment contends that Draft EIR/EIS fails to adequately consider the relevance of the supporting wetland technical memoranda. The comment states that the Draft EIR/EIS does not adequately discuss EPA's jurisdiction over Section 404 wetlands.

A planning level wetland determination is lower in intensity and resolution than wetland delineation for permitting purposes as described in the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual. A wetland delineation for permit purposes involves detailed mapping, while a planning level wetland determination is intended to provide enough information about the location and extent of potential jurisdictional wetlands to allow a comparison of different Project components and alternatives. Due to the large acreages associated with the Project, the Corps agreed that it is more appropriate to conduct planning-level wetland determinations at this stage of the Project. Also refer to Response to Comment 92-16. Formal wetland delineations will be conducted once a final Project alternative has been selected. The Corps has conducted field visits to a few representative Project site locations to verify that the wetland determinations were adequate and could serve as the basis for assessing Project-level impacts to jurisdictional wetland resources (Wade Eakle, Project Manager, U.S. Army Corps of Engineers, personal communication, February, 1996).

Page 18 in Appendix D-5 (Permitting Report) of the Draft EIR/EIS states that permits issued by the Corps are subject to review by the EPA.

Response to Comment 92-94

Comment Summary: The comment states that the Draft EIR/EIS fails to adequately identify "special aquatic sites" which would be impacted by the West County Alternative.

Section 404 of the Clean Water Act defines wetlands and other waters of the U.S. as "special aquatic sites", and the Gulf of the Farallones Marine Sanctuary is also considered a special aquatic site. Page 4.10-23 of the Draft EIR/EIS provides discussion on the

wetlands and other waters of the U.S. identified in the West County Project area. There is additional discussion of the Gulf of the Farallones and both esteros in this section. Additional detail of the function and value of special aquatic sites will be provided during the permitting phase of the selected Project.

Response to Comment 92-95

Comment Summary: The comment states the Draft EIR/EIS fails to adequately consider the Gulf of the Farallones National Marine Sanctuary relevant to regulations governing special aquatic sites (40 CFR 230.40-45).

The Gulf of the Farallones is a special aquatic site, and if a West County alternative is selected, impacts associated with the Esteros will be carefully evaluated during the project permitting phase as addressed in 40 CFR 230.40-45. The Jurisdictional Wetlands Section is provided to discuss impacts associated with "fill of jurisdictional wetlands and other waters of the U.S." Since no fills are expected in the Marine Sanctuary, discussion of the importance of the Marine Sanctuary in the Environmental Setting is limited. Other potential impacts to the Marine Sanctuary are discussed throughout the Draft EIR/EIS.

Response to Comment 92-96

Comment Summary: The comment states that the Draft EIR/EIS fails to adequately consider the effects of introducing new irrigation on new wetland areas which are not "prior converted" agricultural lands.

In agricultural irrigation areas, all jurisdictional wetlands will be buffered, as recommended in Measure 2.2.2: Irrigation Site Resource Maps, on page 2-22 of the Draft EIR/EIS and Measure 2.2.5: Avoid Sensitive Biological Resources, on page 2-28 of the Draft EIR/EIS. These measures are expected to adequately protect all jurisdictional wetlands found within agricultural lands. Because the comment does not indicate what it means by a "new wetland area", no further response can be provided.

Response to Comment 92-97

Comment Summary: The comment states that the Draft EIR/EIS does not mention whether impacts of Project components on jurisdictional wetlands would require a Nationwide permit.

Tables 3 through 6 on pages 44 through 51 of Appendix D-5 (Permitting Report) of the Draft EIR/EIS lists what permits related to jurisdictional wetlands will be required for the implementation of each alternative. Alternatives 2 and 3 will require both a Section 404 and Section 10 permit, while Alternatives 4 and 5 will require a Section 404 permit. The Corps has discretion to determine the appropriate Section 404 permitting mechanism during the project permitting phase. Because of the large acreage of wetlands affected, it is likely that Alternatives 2 and 3 will require individual Section 404 permits, and could not be covered by a Nationwide permit.

Response to Comment 92-98

Comment Summary: The comment states that the Draft EIR/EIS fails to adequately consider the implications of the jurisdiction of the California Coastal Commission on project components expected to occur in the Coastal Zone of the State of California.

Page 4.10-8 of the Draft EIR/EIS provides the following discussion on the regulatory jurisdiction of the California Coastal Commission:

> "State agencies with permitting or review authority over jurisdictional wetlands, and other waters of the U.S. include the California Department of Fish and Game (CDFG), Regional Water Quality Control Boards, and the California Coastal Commission.
>
> A Coastal Zone Development Permit must be obtained for any structures built in the Coastal Zone. The Local Coastal Plan designates the Coastal Zone, the width of which varies considerably. Portions of the Coastal Zone included in the Local Coastal Plan for Sonoma County are the Valley Ford area and the Esteros Americano and de San Antonio. The Sonoma County Board of Supervisors grants Coastal Zone Development Permits. This permit would be required for all Project facilities proposed within the Coastal Zone. Decisions made by the County Board of Supervisors may be appealed to the California Coastal Commission.
>
> Activities permitted under Section 404 or Section 10 must be consistent with the Federal Coastal Zone Management Act. An applicant must submit certification to the Corps that the Project's activity is consistent with the Local Coastal Plan. The Corps District Engineer shall not issue a permit until the Coastal Commission concurs with this certification. This process applies not only to development along the coast, but to all actions which could indirectly impact coastal resources."

Table 1 on page 5 in Appendix D-5 (Permitting Report) of the Draft EIR/EIS summarizes the applicable permits that may be required as part of the Project; pages 26 to 28 of Appendix D-5 provide information regarding permit scheduling, permitting requirements and additional comments; and pages 44 to 51 of Appendix D-5 show what permits will be required for each alternative.

Response to Comment 92-99

Comment Summary: The comment states that the Draft EIR/EIS fails to adequately consider the implications of the jurisdiction of the California State Lands Commission on project components expected to occur within jurisdictional waters of the State Lands Commission.

Table 1 on page 5 in Appendix D-5 (Permitting Report) of the Draft EIR/EIS summarizes the applicable permit (Land Use Lease), that may be required as part of the Project, which

would have to be processed through the California State Lands Commission. Page 24 of Appendix D-5 provides information regarding permit scheduling, permitting requirements and additional comments; while pages 44 to 51 of Appendix D-5 show what permits would be required for each alternative.

The following changes are made to the Draft EIR/EIS:

Page 4.10-8. The third paragraph is revised as follows:

> State agencies with permitting or review authority over jurisdictional wetlands, and other waters of the U.S. include the California Department of Fish and Game (CDFG), Regional Water Quality Control Boards, State Lands Commission, and the California Coastal Commission. Although not discretionary, Streambed Alteration Agreements (Section 1601/1603 CCR), issued by the California Department of Fish and Game, are required for alterations to rivers, streams, or lakes. These agreements stipulate measures that must be taken to mitigate the impact of construction activities in potentially affected waterways. Restrictions may be placed on the timing, duration, and extent of activities to minimize the potential disturbance to fish and wildlife resources.

Page 4.10-8. The following paragraph is added after the third paragraph:

> A Land Use Lease permit would be required if Project activities were to occur within lands under the jurisdiction of the State Lands Commission. The State Lands Commission has jurisdiction over navigable waterways and school lands (former federal lands which were granted to the state school system). Typical activities regulated by the State Lands Commission include placement of fill or structures in navigable waterways or Section 16 or Section 36 lands (California Resources Code, Section 6000 et. seq.). The State Lands Commission has established a two-step process for authorizing use of state-owned land. The first step entails submittal of a location map for a Status Determination. The State Lands Commission would identify any existing leases in the proposed location and, if the uses are compatible, would coordinate an agreement for shared use with existing leases. After an acceptable location is identified, a Status Determination Letter is issued by the State Lands Commission. Receipt of this letter is required prior to submittal of an application for a Land Use Lease. Submittal and review of an application is the final step in the process.

Response to Comment 92-100

Comment Summary: The comment states that the Draft EIR/EIS does not adequately consider the range of wetland types and their importance to water quality and other values in the region.

The methodology utilized in the classification of wetlands in the Jurisdictional Wetland Section was developed with input from the Corps, the United States Fish and Wildlife

Service and the California Department of Fish and Game. In the Draft EIR/EIS, jurisdictional wetlands are classified according to their major vegetative attributes (pages 4.10-11 through 4.10-15). Functions and values (including those attributed with water quality) of these wetlands are provided on page 4.10-9 and pages 4.10-16 through 4.10-21 of the Draft EIR/EIS. Additional functional assessments of the selected Project may be required by the Corps during the permitting process.

Response to Comment 92-101

Comment Summary: The comment states that the Draft EIR/EIS fails to consider the implications of the changes in water quality that are addressed in the evaluation of aquatic impacts associated with coastal brackish marsh and other ecosystems associated with the Estero de San Antonio and Estero Americano.

The comment cites a section of the Draft EIR/EIS where the aquatic setting of the Project area is described. This section is not intended to provide analysis of impacts. The discussion of impacts to Aquatic Biological Resources in Section 4.9, beginning on page 4.9-45, includes an evaluation of aquatic habitat in the esteros. Impact 9.7.6, on page 4.9-78 acknowledges that there will be small alterations in the salinity distribution in certain reaches of the esteros. The comment does not identify how the analysis in the Draft EIR/EIS fails to consider the implications of the changes in water quality.

Response to Comment 92-102

Comment Summary: The comment states that the Draft EIR/EIS fails to adequately consider the implications of the changes in water quality that are addressed in the evaluation of aquatic impacts associated with coastal salt marsh and related ecosystems associated with the Estero de San Antonio and Estero Americano.

Refer to Response to Comment 92-101.

Response to Comment 92-103

Comment Summary: The comment states that the Draft EIR/EIS fails to adequately discuss the lack of success of mitigation associated with vernal pool creation.

No mitigation involving vernal pool creation has been proposed for the Project because none of the proposed storage reservoir sites contain vernal pools. With regard to agricultural lands, pump stations locations, and pipeline corridors, any vernal pool will be avoided and buffered (Measure 2.2.5: Avoid Sensitive Biological Resources, on pages 2-28 through 2-34 of the Draft EIR/EIS). Since there is no vernal pool creation proposed, it is not necessary to provide discussion on the success rates of vernal pool creation.

Response to Comment 92-104

Comment Summary: The comment states that the Draft EIR/EIS fails to adequately consider the implications of water quality changes and wetland habitat loss associated with reservoir sites located within the Stemple Creek and Americano Creek watersheds.

The comment does not state specifically how the Draft EIR/EIS is inadequate with regard to water quality and wetlands impact analysis and therefore no specific response can be provided. Section 4.6 addresses surface water quality impacts (pages 4.6-79 through 4.6-4.6-85) and Section 4.10 (pages 4.10-37 through 4.10-49) addresses jurisdictional wetland resources impacts.

Response to Comment 92-105

Comment Summary: The comment questions whether the prescribed mitigation measures would adequately protect wetland resources.

The minimum 30-foot and 50-foot exclusionary buffers were developed to minimize impacts to isolated wetlands and linear waterways. Thirty-foot vegetated buffers will reduce the potential for irrigation run-off entering the wetland and impede sedimentation induced by cultivation. Fifty-foot buffers will reduce the potential for irrigation run-off to adversely impact upland riparian corridors. These minimum buffers were drawn from established practices at the Llano Road irrigation sites. The buffer widths are minimums which may be increased based on site-specific constraints. Each individual irrigation management plan will have established buffers which may exceed these widths if appropriate.

Response to Comment 92-106

Comment Summary: The comment states that the Draft EIR/EIS fails to justify that wetland impacts will be fully mitigated.

Refer to Master Response 11, located in Section 6.2 of this document.

Response to Comment 92-107

Comment Summary: The comment states that loss of brackish marsh can not be mitigated by creating or restoring fresh water wetlands.

As shown in Table 4.10-11 on page 4.10-59 of the Draft EIR/EIS, no brackish marsh or salt marsh is expected to be lost as a result of the Project. The Irrigation Conservation and Management Programs identified in Measure 2.2.1 on page 2-21 of the Draft EIR/EIS will be designed to avoid and minimize impacts to salinity in the Petaluma Marsh and the esteros.

In addition, the Corps will have ultimate authority, during the permitting phase, over the specifications of the mitigation plan for impacts to wetlands and other waters of the U.S.,

including determination of locations and types. In some circumstances, in-kind replacement (restoration or preservation) could be required to guarantee no net loss of function or value.

Response to Comment 92-108

Comment Summary: The comment states that the Draft EIR/EIS statement "no changes in determination of significance or mitigation are warranted" is not substantiated by evidence in the Draft EIR/EIS.

Implementation of the mitigation program will result in no net loss of wetland function and value, as identified on page 2-76 of the Draft EIR/EIS. As such, there should be no net effect to regional wetlands from the Project following implementation of the mitigation, and no cumulative impacts. Therefore the statement "no changes in determination of significance or mitigation are warranted" is substantiated.

Response to Comment 92-109

Comment Summary: This comment states that the Tanji hydrology and irrigation drainage water quality model presents an inadequate analysis because only 2 seasons (spring and summer) are evaluated, and multiple year droughts are not modeled.

Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation) of the Draft EIR/EIS is a complementary document to the Tanji report, and presents a more in-depth analysis seasonally and over potentially cool summer and dry winter periods. Monthly time-step analysis of hydrologic impacts to creeks (changes in flow) and seasonal changes are presented in Tables 2-9 of Appendix I-10 of the Draft EIR/EIS. This more detailed hydrologic analysis indicates the slight increases in flow conditions during fall and winter periods will be due to improved watershed soil and hydrologic conditions (improved infiltration of rainfall), not to summer irrigation applications of reclaimed water (refer to page 20 in Appendix I-10). Any retarded subflow from late summer irrigation applications that makes its way to creek channels during fall and winter will be greatly masked and diluted by rainfall runoff. Based on the amount of rainfall infiltrating the ground and contributing to subflow during the winter, the EIR/EIS authors estimate flow contributions from wastewater to be less than 0.1 percent during fall and winter. Dry winter irrigation applications are discussed on page 21 of Appendix I-10, and it is concluded that hydrologic/flow impacts are insignificant/unmeasureable. Therefore water quality effects are also insignificant during fall and winter.

The level of investigation of impacts of reclaimed water irrigation application on hydrology and water quality (nitrogen, salt and herbicides/pesticides) are, by far, much more detailed and extensive than any similar reclamation project of which the authors are aware. The analysis was completed with the assistance of one of the world's leading authorities on hydrology/water quality effects of irrigation (Dr. Tanji), using a modeling approach that has been scientifically published and reviewed, and the model has been

calibrated and verified with actual field data. Also refer to Master Response 5, located in Section 6.2 of this document.

Response to Comment 92-110

Comment Summary: The comment states that an inadequate range of pesticides is considered. The comment states that only two pesticides were evaluated and the high-tech scenario would likely involve additional pesticides.

The EIR/EIS authors acknowledge that a broad range of pesticides may be used, and agree that it is not accurate to characterize the two pesticides as "representative" (refer to Response to Comment 92-120). The impact of two pesticides (a common herbicide and a common insecticide) was evaluated to provide an indication of the impacts that could be expected from proper use of a broad range of pesticides. Measure 2.2.6: Agrochemical and Fertilizer Best Management Practices, on page 2-34 of the Draft EIR/EIS, requires that any pesticide be applied according to particular guidelines to "minimize offsite movement of pesticides." In addition, the ICMPs will incorporate the State Water Resources Control Board Technical Advisory Committee's management recommendations concerning pesticides, which include requirements for application of the least toxic and the lowest amounts of pesticides necessary. Adherence of the pesticide applicator to the restrictions established and enforced by USEPA and the State of California for each pesticide is expected by the City of Santa Rosa to minimize offsite impacts, which are characterized in Appendices I-1 (Estimation of Nitrogen, Salt and Herbicide/Pesticide Concentrations in Surface Water) and K-4 (Ecological Risk Assessment) of the Draft EIR/EIS for a common herbicide and a common insecticide.

Response to Comment 92-111

Comment Summary: This comment critiques the analysis of water quality impacts from irrigation application of reclaimed water containing trace metals because all West County soils are grouped together (the analysis makes unwarranted assumptions about uniformity and geographic distribution of soils).

Table 1 in Appendix I-2 (Evaluation of Metals in Irrigation Affected Percolate) of the Draft EIR/EIS presents criteria and assumptions used to select uptake/attenuation coefficients. Soil organic matter content, pH, and clay mineralogy are most influential in determining the metals attenuation characteristics of West County soils. Although there are 7 or 8 widely distributed soil types in the West County area that are potentially irrigable, they are similar with respect to soil organic matter content, pH, and clay mineralogy because of their similar geologic origin and soil genesis. The substantially increased costs of separate modeling of differing soil types throughout the watersheds is therefore not warranted (refer also to Response to Comment 92-137). Also refer to Master Response 5, located in Section 6.2 of this document.

Response to Comment 92-112

Comment Summary: This comment criticizes the nitrogen model because it averages input variables and output functions to create an idealized scenario, which may not be representative of non-typical conditions.

Refer to Response to Comment 92-109; the N model has been calibrated and field verified. It is not practical to model all atypical conditions.

Response to Comment 92-113

Comment Summary: The comment states that the nitrogen model discussed in Appendix I-1 assumes high nitrogen demand without evaluating whether the crops are commercially viable.

The nitrogen model evaluates the three different crop scenarios (high tech, medium tech, and low tech) that have been developed in the Draft EIR/EIS to describe potential cropping patterns in West County. Crop scenarios were developed to reflect the particular topography and climate of West County. Each of these scenarios was evaluated in Section 4.18 of the Draft EIR/EIS and was found to be economically viable. The low tech scenario for West County assumes that agricultural practices change very little, with 4,500 acres of irrigated pasture, 900 acres of forage, hay and silage, and only 200 acres of vegetable crops. Thus these scenarios are reasonable for evaluation using the nitrogen model.

Response to Comment 92-114

Comment Summary: The comment objects to restrictions that would be placed on crops grown in West County.

Mitigation Measure 2.3.2: Restrict Approval of Irrigation Contracts, on page 2-63 of the Draft EIR/EIS, states that "The City shall not approve irrigation contracts for new orchards and vineyards on slopes greater than 10% or for specialty crops on slopes greater than 5% (as identified in Measures 2.2.4). Approval of contracts for these lands shall be granted only after the City of Santa Rosa has completed a demonstration program showing that the restricted agricultural uses can be conducted on these sloped lands without causing excessive soil erosion. The demonstration program is explained under Mitigation Measures 2.3.3. This restriction is needed to ensure that excessive erosion does not result from irrigation of slopes. Since this restriction only affects certain crops grown on slopes and most existing users cannot grow these crops without an available water supply, the EIR/EIS authors do not agree that the restrictions will "substantially limit farm and ranch owners individual discretion over which crops to grow."

Response to Comment 92-115

Comment Summary: This comment claims that Appendix I-1, (Estimation of Nitrogen, Salt and Herbicide/Pesticide Concentrations in Surface Water, and Mass Loading Analysis from Irrigation with Reclaimed Water, West County and South County Alternatives) is inadequate because it does not indicate how much more of these substances would be used in the low-tech versus medium-tech versus high-tech agricultural uses.

Actual input variables for crop test cases are included in the Tanji report to Questa entitled "Water Quality Evaluations on Wastewater Irrigation in West County and South County Alternatives, July 1995". This document is located in the Laguna Treatment Plant Library.

Response to Comment 92-116

Comment Summary: This comment claims the draft document is inadequate because although lettuce and potatoes were modeled, the report does not specifically mention the chemical intensive nature of these crops, as demonstrated by elevated levels of nitrogen in groundwater in the tri-cities areas of central Washington, where these crops are grown intensively.

The referenced tri-cities area represents a large region where a much larger percentage of the irrigable lands can be intensively farmed than in the West County area. In addition, the tri-cities area has had a long history of agricultural use when fertilizer and farm chemical application practices had few restrictions, which has gradually led to the problems with nitrogen in groundwater referenced. Appendix D-19 (Irrigation Management Guidelines for the West County and South County Alternatives) of the Draft EIR/EIS places restrictions on use and application of agrochemicals which will not cause similar problem to West County water resources (refer to page 40 in Appendix D-19). These restrictions are summarized in Measure 2.2.6: Agrochemical and Fertilizer Best Management Practices on page 2-34 in the Draft EIR/EIS.

Response to Comment 92-117

Comment Summary: The comment states that Appendix I-1 evaluates only two pesticides, yet Appendix I-1 states that other pesticides could be used. The comment states that other pesticides, their application rates, and impacts should be identified.

Refer to Response to Comment 92-110.

Response to Comment 92-118

Comment Summary: This comment requests documentation of the 1-2 percent irrigation runoff estimate used as an assumption in the hydrology/water quality model.

Regulations allow no runoff from reclaimed water irrigation areas, but the EIR/EIS authors are aware that in actual practice this stringent standard is difficult to achieve at all times. Thus an assumption of some runoff was made. The assumption of 1 to 2 percent runoff is based on the professional experience of the EIR/EIS authors in designing, managing and evaluating irrigation systems. This runoff assumption was made for purposes of a worst-case impacts assessment on flow. Section 3 in Appendix D-19 (Irrigation Management Guidelines for the West County and South County Alternatives) and Measure 2.2.3: Restrict Soil Erosion and Sediment Movement (Irrigation Sites) on page 2-23 of the Draft EIR/EIS describe methods that will be used to reduce runoff below that assumed for modeling purposes.

Response to Comment 92-119

Comment Summary: This comment notes the technical report statement that some crops have higher (or lower) stream discharges and differing water quality effects than other crops, but does not identify which other crops, and what the water quality effects of those crops would be.

The Tanji report referenced in Appendix I-1 (Estimation of Nitrogen, Salt and Herbicide/Pesticide Concentrations in Surface Water) provided data on each of the crops used in the three scenarios.

Response to Comment 92-120

Comment Summary: The comment states that Appendix I-1 does not substantiate the claim that the two selected pesticides are representative of other pesticides.

The EIR/EIS authors agree that it is not completely accurate to characterize the two pesticides as "representative". The impact of two pesticides was evaluated to provide an indication of the impacts that could be expected from proper use of a broad range of pesticides.

The following change is made to the Draft EIR/EIS.

Page 5, Appendix I-1. The third paragraph is revised as follows.

> Based on management needs, a large number of new herbicides and pesticides (insecticides, fungicides, etc.) potentially could be used in the West or South County project areas. Two of the most commonly used in Sonoma County (the herbicides 2,4-D and the insecticide carbaryl [trade name Sevin]) were selected ~~as representative of possible water quality impacts. In part, their selection was~~ based on knowledge of their behavior, toxicity and modeling capabilities.

Response to Comment 92-121

Comment Summary: This comment claims the document is inadequate because it fails to explain why the assumption is made that only 25 percent of forage crop land would receive applications of 2,4,D in any year.

This assumption is based on the experience of the authors and information supplied by Lynn Brittan, former District Conservationist with the Southern Sonoma Resource Conservation District, based on personal discussions with ranchers and commercial agrochemical applicators in the Sonoma County area. Based on current herbicide usage patterns for forage crops in Sonoma County, the 25 percent application assumption is realistic.

Response to Comment 92-122

Comment Summary: The comment asserts that the Draft EIR/EIS is inadequate in that it fails to explain the implications for Estero Americano and Estero de San Antonio of the predicted 300% increase in salt concentrations with the high-tech cropping scenario.

The effect of the Project on salinity in the Esteros is described in Figures 6-1.1 through of 6.1-24 in Appendix 17 (Water Quality Impacts Analysis Volume II - Figures) of the Draft EIR/EIS. The effect of salinity changes on Estero biota is addressed on pages 4 and 5 in Appendix L-7 (Aquatic Biological Resources Impacts Analysis) of the Draft EIR/EIS, as modified in Response to Comment 92-237.

Response to Comment 92-123

Comment Summary: The comment states that mitigation should be identified for the effect of the project on salt discharge to the esteros of west county.

Use of the word "significant" in Appendix I-1 (Estimation of Nitrogen, Salt and Herbicide/Pesticide Concentrations in Surface Water) of the Draft EIR/EIS is ambiguous and creates confusion. The term "significant" has a particular meaning in the Draft EIR/EIS relative to the objective evaluation criteria. Since evaluation criteria are not identified and significant impacts are not identified in Appendix I-1, the term "significant" is used subjectively. Significant impacts on the esteros are identified in Section 4.6 and Section 4.9 of the Draft EIR/EIS and mitigation has been recommended for these impacts where feasible.

To avoid this ambiguity, the following changes are made to Draft EIR/EIS:

Page 7, Appendix I-1. The third paragraph is revised as follows:

> The Project will increase the quantity of~~most significant increase predicted by the water quality modeling is in~~ salt that discharges to the estuaries. Increases of more . . . Salts, which generally do ~~are~~ not accumulate~~d to any significant extent~~

in the growing crops, and are relatively mobile in the soil environment, are easily . . . ."

Page 8, Appendix I-1. The last sentence of the second paragraph is revised as follows:

Salts, being relatively soluble and mobile, are retained less in the watershed ~~to a much less signficant extent~~ (84%).

Response to Comment 92-124

Comment Summary: The comment refers to Appendix I-1, quotes a passage about the amount of salt entering estuaries, and states that impacts of irrigation on estuaries have not been identified.

The authors of the Draft EIR/EIS do not agree with the comment that the effect of salt load to the esteros has not been evaluated. Refer to Response to Comments 92-76 and 92-122. The EIR/EIS authors find that a statement in Appendix I-1 (Estimation of Nitrogen, Salt and Herbicide/Pesticide Concentrations in surface Water) of the Draft EIR/EIS is inconsistent with the evaluation described in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS.

The following changes are made to the Draft EIR/EIS:

Page 7, Appendix I-1. The last paragraph is revised:

...Virtually all salts added to the watershed eventually will be discharged to the estuaries. ~~This~~ The effect of the predicted increase in the annual mass discharge of salts from project watershed lands ~~should be put into proper perspective. The salt discharge from watershed runoff and subflow represents a very small amount of salt (estimated less than one percent) compared to the salts entering the estuaries with tidal flow. The effects of this are~~ on the esteros is discussed in the *Water Quality Impact Analysis* Technical Report (Merritt ~~–~~ Smith Consulting~~ants~~, July ~~April~~, 1996)

Response to Comment 92-125

Comment Summary: The comment states that the salt loading calculations presented in "Table 4. Watershed Loading Analysis", do not appear to be derived by the method stated in the report, which is a calculation of the difference between total load and stream mass loading discharge.

Total watershed loading is calculated by multiplying wastewater concentrations by total amount of wastewater applied to each watershed. Watershed discharge was calculated by previous models completed by Ken Tanji. The difference between applied and discharged loads is then divided by the total applied load to attain the percentage retained in the watershed. The sample calculation is as follows:

Total Load (TDS) = 14,412,570; Discharge Load (TDS) = 2,263,173; Difference (retained salt) = 12,149,397

Percentage Retained = 12,149,397 / 14,412,570 = 0.842 = 84%

Response to Comment 92-126

Comment Summary: The comment states that Appendix I-2 is based on a previously discredited method, and that no substantiation is provided for "reassurance that significant bonding of metals to soil" will occur.

The EIR/EIS authors do not consider the method to have been discredited and the comment does not state why or how it believes the method to be discredited. The method used to evaluate the fate of metals is explained in Table 1 on page 7 of Appendix I-2 (Evaluation of Metals in Irrigation-Affected Percolate) of the Draft EIR/EIS, and the comment provided no support for its contention that the method was inappropriate. The authors also disagree with the contention that the model underestimates the load of metals reaching surface waters in the West County watershed. The analysis in Section 4.6 of the Draft EIR/EIS identified significant copper impacts in the creeks and significant water quality impacts, including metals, in the esteros.

Response to Comment 92-127

Comment Summary: The comment refers to Appendix I-2 and states the Draft EIR/EIS fails to consider "a number of related metals issues associated with eroded soil particles, leaching . . ." etc.

The scope of Appendix I-2 (Evaluation of Metals in Irrigation-Affected Percolate) of the Draft EIR/EIS is stated in the first sentence of the report. The EIR/EIS authors do not agree that, because the scope of Appendix I-2 is not broader, the report is inadequate. The effect of eroded soil particles and leaching of native soil metals was not evaluated because the effect of these phenomena on metals in receiving water is expected to be small under Project conditions and because of the speculative nature of such an evaluation given the information that was available to conduct the analysis. In fact, implementation of Measure 2.2.4: Restrict Soil Erosion and Sediment Movement (Irrigation Sites), described on page 2-26 of the Draft EIR/EIS is expected to result in a decrease in the soil loss relative to existing conditions, and a consequent reduction in soil-adsorbed metals. Lime application for soil pH management that is included in Measure 2.2.3: Restrict Surface and Subsurface Irrigation Water Runoff (refer to page 2-23 of the Draft EIR/EIS), will also likely result in reduced metals leaching. The effect of irrigation and storage components on deep groundwater percolation and domestic wells was evaluated in Appendices H-1 (Hydrogeology of Storage/Reuse Areas and Evaluation of Potential Impacts to Groundwater) and J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water) of the Draft EIR/EIS

Response to Comment 92-128

Comment Summary: The comment states that the Appendix I-2 fails to substantiate the assumption that the shallow zone groundwater will be entirely discharged after a one to four-month time lag and that that local conditions will cause variation in the rate at which subsurface flow migrates from irrigation areas to local streams.

The comment that local conditions will cause variation in the rate at which subsurface flow migrates from irrigation areas to local streams is correct. The analysis in Appendix I-2 (Evaluation of Metals in Irrigation-Affected Percolate) of the Draft EIR/EIS is represented as an average condition in the watershed, and is not represented as characteristic of any particular location. Therefore, the variability is considered to be already recognized in the Draft EIR/EIS.

Response to Comment 92-129

Comment Summary: This comment claims the draft document is inadequate because it fails to quantify the effects of evapotranspiration losses on metals concentrations.

This comment is incorrect. The mass balance formula on page 7 of Appendix I-2 (Evaluation of Metals in Irrigation Affected Percolate) of the Draft EIR/EIS includes consideration of evapotranspiration in the calculation of the leaching fraction (Lf), or the fraction of the total volume of water that enters groundwater.

Response to Comment 92-130

Comment Summary: This comment requests substantiation for the statement that West County aquifers may provide a 100-fold or more dilution level.

The statement in the Draft EIR/EIS is incorrect. This paragraph pertains to the South County area.

The following change is made to the Draft EIR/EIS:

Page 3, Appendix I-2 The last sentence in the second paragraph is revised as follows:

> In reality, aquifer dilution may be 100-fold or more in South~~West~~ County aquifers, since the irrigation percolate will constitute less than one percent of the water volume of the aquifer.

Response to Comment 92-131

Comment Summary: The comment states that no mitigation is provided for irrigation impacts on streams and wells.

Refer to Responses to Comments 92-88 and 92-91.

Response to Comment 92-132

Comment Summary: The comment refers to Appendix I-2 and states that no analysis of cumulative metals loading is provided.

The comment incorrectly asserts that the analysis of metals impacts was not based on "cumulative metals loading." The analysis considered existing sources of metals and potential changes to metals in the future as a result of other projects. As noted in the Response to Comment 92-90, the analysis of Project impacts on metals concentration in West County surface waters is based on the existing background copper concentration in the surface water. Potential changes to metals in the future as a result of other projects is evaluated beginning on page 4.6-130 of the Draft EIR/EIS.

Response to Comment 92-133

Comment Summary: This comment requests information on the importance of intersoil:metal reactions such as ion exchange, formation of organic complexes and chelates, surface absorption, and precipitation as iron and manganese hydrous oxides and sulfide compounds. The comment also requests information on the implications of these "by-products" on sensitive environmental assets (presumably biological receptor organisms such as soil dwelling insects).

Trace metals in the soil are in equilibrium among 3 phases: 1) a readily soluble and therefore biologically available and mobile phase; 2) slowly soluble; and, 3) nearly insoluble. These two latter forms are not generally biologically available.

Various soil metal reactions including those listed above can "tie-up" or convert mobile and soluble or dissolved metals into these less soluble (more inert) forms, thereby making them less available to biologic processes and greatly reducing potential toxic effects. The extent to which readily soluble/biologically available/mobile metal forms are converted to less soluble forms varies among soils, depending on such soil properties as soil pH or acidity, clay content and clay mineralogy, organic matter content, and the occurrence of naturally occurring hydroxides, carbonates, and other salts and minerals in the soil. These are listed in Table 1 of Appendix I-2 (Evaluation of Metals in Irrigation - Affected Percolate) of the Draft EIR/EIS. Footnotes to the table provide a quick summary/overview of the soils of the West County and South County and the rationale for assigning attenuation values. Generally, the soils are mildly to moderately acidic, are fine textured (clayey) with a mixture of 2:1 and 1:1 clays (mixed mineralogy) with cation exchange capacities of 10-20 meq/100g, and organic contents of 0.5 to 2.0 percent. These soil conditions attenuate metals present in well managed irrigation water.

The conceptual model used in the analysis evaluates the potential for West County and South County soils to influence the conversion process between soluble and less soluble forms, and based on a qualitative evaluation of soil properties, the authors assigned an attenuation value to the soils for use in the mass balance equation provided on page 7 of Appendix I-2 of the Draft EIR/EIS.

More information on the soils was included in the February 1990, CH2M Hill report entitled ("Santa Rosa Subregional Water Reclamation System Long-term Detailed Wastewater Reclamation Studies Draft Technical Memorandum No. R12 on the Irrigation Suitability Land Classification for the Stemple/Americano Creeks area of Sonoma County") including soil pH. For instance, native metals in the soil were determined on DPTA extracts of the soils. The DPTA extract procedure is considered to be a good model of biologically readily available forms of metals in the soil. Generally, low levels of resident trace metals were found in West County and South County soils, indicating that irrigation with reclaimed water should not "leach" these metals from the soil into the hydrologic cycle.

Soil pH or acidity is one of the most important variables influencing the equilibrium reactions between readily available and slowly available forms of metals. Generally, the more acidic the soil, the more soluble/available the heavy metals. Soil pH is also readily and routinely managed, for instance, by application of agricultural lime; to raise pH to near neutrality. Generally, metals build-up in the soil and shallow groundwater from irrigation or bio-solids applications (assuming reasonable quality water and bio-solids metals levels) occurs slowly. Pages 42 and 43 in Appendix D-19 (Irrigation Management Guidelines for the West County and South County Alternatives) of the Draft EIR/EIS, outlines monitoring requirements for soil pH and metals in soils and shallow groundwater. In the unexpected event that soluble and biologically available/mobile phase of metals begin to be detected during monitoring in elevated and increasing amounts, then management actions can be taken, including liming, incorporation of a green cover crop, or manuring, to raise organic matter content.

Response to Comment 92-134

Comment Summary: This comment considers the draft document inadequate because it does not describe pH characteristics of West County soils which may influence the mobility and biological availability of metals to the environment.

Refer to Response to Comment 92-133. A characterization of the reaction of West County Soils is provided in footnotes to Table 1 of Appendix I-2 (Evaluation of Metals in Irrigation - Affected Percolate) of the Draft EIR/EIS. More information on soil pH is available in the February 1990, CH2M Hill report entitled Santa Rosa Subregional Water Reclamation System Long-term Detailed Wastewater Reclamation Studies Draft Technical Memorandum No. R12 on the Irrigation Suitability Land Classification for the Stemple/Americano Creeks area of Sonoma County.

Response to Comment 92-135

Comment Summary: This comment faults the analysis of metals in irrigation affected percolate presented in Appendix I-2 (Evaluation of Metals in Irrigation-Affected Percolate) because the authors made the statement that it is difficult to accurately predict metals concentrations in water...which the commentor took as an "arbitrary claim of impossibility".

This comment misstates the intent of the authors' language in the document. The EIR/EIS authors did not state it was “impossible” to estimate metals, merely that it was difficult to be precise and highly accurate quantitatively from an academic viewpoint. Appendix I-2 presents an objective and quantitative evaluation of impacts associated with trace metals levels in reclaimed water, suitable in scope to the purposes and needs of the Draft EIR/EIS.

Response to Comment 92-136

Comment Summary: The comment states that the Draft EIR/EIS fails to provide mitigation for metals impacts on soil-water.

The purpose of Appendix I-2 (Evaluation of Metals in Irrigation - Affected Percolate) of the Draft EIR/EIS is to identify impacts. The significance of impacts is evaluated in other reports according to the criteria that are identified in Section 4 of Appendix I-2. No mitigation is identified specifically to address soil-water impacts because no significant impacts on soil-water were identified. Nonetheless, particular irrigation strategies, described in Measures 2.2.1: Irrigation and Conservation Management Programs, and 2.2.3: Restrict Surface and Subsurface Irrigation Water Runoff, are included in the Project to minimize irrigation impacts (refer to pages 2-21 and 2-23 in the Draft EIR/EIS).

Response to Comment 92-137

Comment Summary: This comment is critical of the document because of supposed document failure to substantiate the claim that various naturally occurring soil chemical processes are available in West County soils that will act to remove a large percentage of the irrigation applied metals. The comment requests information on how large a portion of the metals will be removed for each of the various soil types.

Scientific references are provided in the document so that the interested reader can become more informed on the soil processes outlined. Some additional information is contained in the Appendix E-6 (Trace Element Loading Analysis for the South and West County Alternatives) of the Draft EIR/EIS. An estimate that 2 to 10 percent of the applied trace metal may leave the site in leachate or runoff was cited on page 2 of that Appendix, based on scientific references. Page 6 of Appendix I-2 (Metals in Irrigation Affected Percolate) of the Draft EIR/EIS cites as typical removal 85 to 95 percent for copper, and 25 to 95 percent for zinc, depending on soil conditions and management. Concentration effects are discussed on page 10 of Appendix I-2. These references provide substantiation to the observation made in the document that naturally occurring soil processes can remove a large percentage of applied dissolved metals.

As outlined in Response to Comment 92-133, it was neither practical nor necessary to separately evaluate all irrigable soil types that occur within the West County. The most widely distributed soils in the West County are not dissimilar in the properties that influence metals attenuation. For instance, according to the 1972 USDA Sonoma County

Soil Survey, nearly all of the soils have a similar clay mineralogy (mixed), similar (fine or fine-loamy) particle size classes, are generally slight to moderately acidic and non-calcareous in their upper layers, have similar organic matter contents (0.5-2 percent O.C.) and similar cation exchange capacities (10-20 meq/100g) and base exchanges (30-45 percent). (In Appendix I-2, refer to the Summary of Laboratory Data in Sonoma County Soil Survey on page 177; the Soil Taxonomic Classification on pages 173 and 174; and descriptions of individual soil series.)

Response to Comment 92-138

Comment Summary: The comment states that the Draft EIR/EIS does not describe how a "high level of irrigation management' will be achieved

Measures 2.2.1 and 2.2.3 on pages 2-21 and 2-23 of the Draft EIR/EIS describe how a high level of irrigation management will be achieved and assured, and Appendix D-19 (Irrigation Management Guidelines for the West County and South County Alternatives) of the Draft EIR/EIS is dedicated to a description of irrigation system management.

Response to Comment 92-139

Comment Summary: The comment states that Appendix I-2 fails to recognize the effects of biomagnification and bioconcentration.

The effects of biomagnification and bioconcentration are addressed in Appendix K-4 (Ecological Risk Assessment) of the Draft EIR/EIS.

Response to Comment 92-140

Comment Summary: The comment states that no substantiation is provided for the statement in Appendix I-2 that particular metals are slightly concentrated in soil-water.

This data are provided in Table 3 on page 9 in Appendix I-2 (Evaluation of Metals in Irrigation-Affected Percolate) of the Draft EIR/EIS.

Response to Comment 92-141

Comment Summary: The comment refers to Appendix I-2 and states that the implications of metals impacts for downgradient biological resources within the esteros should be further explored in the Final EIR/EIS.

The implications of metals derived from irrigation are evaluated in Appendices K-3 (Biological Resources, Volume III), I-16 (Water Quality Impact Analysis Volume I - Text) and I-17 (Water Quality Impact Analysis Volume II - Figures) of the Draft EIR/EIS.

Response to Comment 92-142

Comment Summary: The comment states that more estero fish data are needed and that typical population studies are conducted with a minimum timeframe of five years.

The EIR/EIS authors do not agree with the unsubstantiated comment that "typically, studies related to [fish] populations in the marine environment . . . are conducted within a minimum timeframe of five years." The authors also do not agree with the comment that the Draft EIR/EIS is inadequate because it relies on an estero fish study that is of a duration of less than five years. Refer to Master Response 5, located in Section 6.2 of this document, concerning use of data in the EIR/EIS.

Response to Comment 92-143

Comment Summary: The comment states that littoral sand transport affects bar closure and that a study of the role of nearshore ocean currents on littoral sand transport and estero bar closure is needed.

The EIR/EIS authors agree that littoral sand transport affects bar closure, but do not agree that a study of the role of nearshore ocean currents on littoral sand transport and estero bar closure is needed. Sand accumulation and bar closure will not be affected by Alternative 3; rather the impacts of Alternative 3 will be affected by bar closure. Impacts were evaluated under bar-open and bar-closed conditions in Appendices I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) and I-16 (Water Quality Impact Analysis Volume I - Text) of the Draft EIR/EIS. The authors agree that littoral sand transport should be identified as a factor affecting bar closure,

The following changes are made to the Draft EIR/EIS:

Page 2, Appendix I-3. The second sentence in the second paragraph is revised as follows:

> Sand can accumulate in the inlet as a result of wind-induced turbulence and littoral sand transport in Bodega Bay.

Page 4.6-45. The second sentence of second paragraph is revised as follows:

> Sand can accumulate in the inlet as a result of wind-induced turbulence and littoral sand transport in Bodega Bay.

Response to Comment 92-144

Comment Summary: The comment states that no substantiation is provided that freshwater inflow can flush virtually all seawater from the esteros.

Appendix WQ1 of Appendix I-3 (Environmental Conditions in West County Waterways) of the Draft EIR/EIS includes field measurements of very low salinity at the extreme lower end of Estero Americano on 2 March 1989. These salinity measurements were

made at high tide, and high freshwater flow during low tide will completely flush salt water from the Estero.

Response to Comment 92-145

Comment Summary: The comment states that no effort was made to sample the estero at low tide.

The comment that no data were collected at low tide is not correct. As noted on page 7 in Appendix I-3 (Environmental Conditions in West County Waterways) of the Draft EIR/EIS, continuously recording water quality equipment was deployed in the esteros.

Response to Comment 92-146

Comment Summary: The comment refers to Appendix I-3 and states that metals hardness data should be collected based on empirical data rather than on estimates.

The EIR/EIS authors agree with the comment that water hardness should be measured in West County streams. The text of Appendix I-3 (Environmental Conditions in West County Waterways) was prepared prior to the collection of West County hardness data. Data were subsequently collected and the evaluation of significance is based on hardness values measured in West County streams, as described on page 188 in Appendix I-16 (Water Quality Impacts Analysis Volume I - Text) of the Draft EIR/EIS.

Response to Comment 92-147

Comment Summary: This comment expresses the opinion that in Appendix I-3 no substantiation is provided for the hypothesis that greater faunal diversity in Estero Americano is due to its mouth being maintained open continuously.

The hypothesis that greater faunal diversity in Estero Americano is due to its mouth being maintained open continuously is primarily based on a comparison with observations in Estero de San Antonio, which had a less diverse fauna and was allowed to open and close naturally during the period studied. There are aspects of the data which are not consistent with such an hypothesis or which do not require it, and several of these are discussed in Appendix I-3 (Environmental Conditions in West County Waterways) of the Draft EIR/EIS. For example, on page 14 in discussing the zooplankton catches in Estero de San Antonio, it is emphasized that catches were not more diverse during mouth-open conditions than when closed; the longer list of epibenthic invertebrates in Estero Americano is largely due to sampling within eelgrass beds, which were not sampled in Estero de San Antonio; and the greater number of fish species in Estero Americano would be expected on the basis of the "species area" relationships alone (refer to pages 28 and 29 in Appendix I-3). Much of the information gathered in the 1988-1990 estero monitoring is consistent with the hypothesis that the fauna is more diverse when the mouth is maintained open continuously; but there are also several aspects of the data which contradict such an hypothesis. Appendix I-3 does not claim to have

"substantiated" this hypothesis by proving a cause-and-effect relationship between faunal diversity and mouth-open conditions; it merely reports the results of a monitoring program in which more faunal diversity was found in a mouth-open estuary than in one which opened and closed.

Response to Comment 92-148

Comment Summary: The comment states that the Draft EIR/EIS fails to include an analysis of project impacts on the Tidewater goby, a federally endangered species found in Estero Americano and Estero de San Antonio.

Because the tidewater goby is adapted to a broad range of salinities it will not be affected by any project-related changes in salinity. Project impacts on tidewater goby populations are discussed in the Response to Comment 92-237. The Esteros are included within the Gulf of the Farallones National Marine Sanctuary, and measures that reduce Project impacts on the Sanctuary include Measures 2.2.1 through 2.2.12, 2.5.1 2.5.2, and 2.5.3.

Response to Comment 92-149

Comment Summary: This comment criticizes the estero comparison in Appendix I-3 (Environmental Conditions in West County Waterways) for failure to recognize the "ecological island" effect of seasonally self-contained ecosystems such as Estero Americano and Estero de San Antonio.

The estero comparison on pages 28 and 29 of Appendix I-3 emphasizes that the longer list of fish species collected in Estero Americano relative to Estero de San Antonio would be expected because the former is larger and was more extensively sampled. The "ecological island" metaphor for seasonally self-contained systems (such as Estero de San Antonio during the study period) may be a useful concept but it does not have any particular relevance to the impact analysis conducted for the Long-Term Project.

Response to Comment 92-150

Comment Summary: This comment expresses the opinion that in Appendix I-3 no substantiation is provided for the hypothesis that the lower, saline layer provided a refuge for estuarine invertebrates following heavy freshwater runoff on 7-8 February 1990.

Water quality data for 7-8 February show that the water column at station E-5 (Estero Americano near Franklin School Road) was not stratified with respect to salinity or dissolved oxygen. Refer to Appendix WQ1 of Appendix I-3 (Environmental Conditions in West County Waterways) of the Draft EIR/EIS. Salinity and dissolved oxygen stratification persisted at station S-6 (Estero de San Antonio at Franklin School Road). Refer to Appendix WQ2 of Appendix I-3. Trawls at E-5 contained dead crabs and mysids; those at S-6 did not contain dead invertebrates. The authors stated "this suggests that the lower saline layer provided a refuge from the lethal effects of freshwater on this

date." The hypothesis is not "substantiated" by cause-and-effect proof. It is only a hypothesis, although an obvious one considering the data. Some other hypotheses could be ruled out, for example that the runoff contained a chemical toxicant, in which case dead freshwater animals would have been seen, whereas only marine/estuarine animals were found.

Response to Comment 92-151

Comment Summary: This comment challenges the statement in Appendix I-3 (Environmental Conditions in West County Waterways) that the data at hand (all based on observations during a period when the bar was kept open artificially) provide an indication of the distribution of biota in Estero Americano when the bar is closed. Additional field work over three or more seasons during the current and more natural management regime (bar allowed to open and close naturally) would be required to predict baseline conditions in the Estero Americano.

The EIR/EIS authors agree that it is incorrect to state without qualification that, "The data at hand provide an indication of the distribution of biota in Estero Americano when the bar is closed."

The following change is made to the Draft EIR/EIS:

Page 31, Appendix I-3. The third paragraph is revised as follows:

> …The data at hand provide an indication of the distribution of biota in Estero Americano when the bar is closed. No observations on Estero Americano were made under bar-closed conditions during the present study, but some speculations about how the estero might be expected to respond to bar closure may be made based on bar-closed observations in Estero de San Antonio. Observations made in 1989-1990 in Estero de San Antonio would suggest that the upper riverine parts of Estero Americano will be less saline but probably not be much different biologically,…

As regards the need for additional study that would reflect conditions under the current and more natural management regime, the Draft EIR/EIS study team has not been allowed access to the esteros to conduct additional studies since the esteros have been included within the Gulf of the Farallones National Marine Sanctuary. Even if such studies had been made, they would not have satisfied this requirement, since the mouth of Estero Americano has remained open naturally during the summers preceding issuance of the Draft EIR/EIS in 1996. The subject of whether three (or five, or any preset number) years of study are required according to NEPA and CEQA is discussed in Master Response 5, located in Section 6.2 of this document.

Response to Comment 92-152

Comment Summary: This comment refers to Appendix I-5 page 5 and states that the small number of sampling dates is inadequate to provide meaningful data on water quality in the cited streams.

Water quality data were collected in proportion to expected impacts and water quality variability. Analyses found in Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternatives) of the Draft EIR/EIS indicated that creeks in West County and Tolay Creek were the only surface waters to be affected by irrigation. Appendix I-3 (Environmental Conditions in West County Waterways) of the Draft EIR/EIS shows that samples were collected in West County streams on approximately 30 dates. Appendix I-5 (Irrigation/Storage Streams Water Quality Monitoring Results) of the Draft EIR/EIS shows that samples were collected in Tolay Creek on three dates. A relatively large number of samples were collected in West County streams as part of a previous study to evaluate the effects of direct reclaimed water discharge to West County streams. The samples were collected in Tolay Creek in spring/early summer, when reclaimed water quality impacts will be greatest due to low background flow. Later in the season, Tolay Creek has no natural flow. The EIR/EIS authors consider the number of samples to be adequate given their use in Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS for evaluating water quality impacts.

Response to Comment 92-153

Comment Summary: The comment states that the basis for considering created wetlands as a means to denitrify reclaimed water is anecdotal.

The EIR/EIS authors do not agree with comment that the basis for considering created wetlands as a means to denitrify reclaimed is anecdotal. The basis is five years of operating data at the City's Kelly Farm Demonstration Wetland which shows how much denitrification can be expected under local conditions. Kadlec and Knight (1995) is another basis of this evaluation, and this reference is not considered by the authors to be anecdotal. Kadlec and Knight (1995) is based on data from 371 surface wetlands in North America. The comment confuses habitat value with the single biological process of denitrification.

Response to Comment 92-154

Comment Summary: The comment refers to Appendix I-9 and states that the strategy in the Draft EIR/EIS of creating wetlands to mitigate wetlands loss is flawed because created wetlands do not provide full compensation for lost value of natural wetlands.

The comment is based on the mistaken and incorrect premise that created wetlands considered in Appendix I-9 (Treatment Wetlands Evaluation) of the Draft EIR/EIS are intended to mitigate for loss of jurisdictional wetlands due to Project implementation.

Appendix I-9 evaluates the potential for nitrogen removal in created wetlands, and the Project is not based on any assumption that such wetlands would mitigate loss of jurisdictional wetlands. Indeed, wetland creation for nitrogen removal is not included in the Project description and is identified as optional mitigation for Impact 6.9.2 on page 4.6-125 of the Draft EIR/EIS (refer to Mitigation Measure 2.5.6: Total and Ammonia Nitrogen Source Control Program on page 2-131). Mitigation Measure 2.3.11: Sensitive Resource Conservation Program, on page 2-76, describes how wetland loss will be minimized and mitigated. The goal of wetland creation as described in the measure will be to replace lost values including habitat values. To achieve no-net loss of wetland acreage will require a wetland creation component.

Response to Comment 92-155

Comment Summary: The comment states that Appendix I-9 fails to identify mitigation for bioconcentration impacts that are inevitable in wetlands.

The bioaccumulation of metals that the comment asserts is "inevitable" in created wetlands is not substantiated by the comment. The potential for bioaccumulation due to proposed Project components is evaluated in Appendices I-13 (Sediment Quality Characterization and Impacts Assessment), K-3 (Biological Resources Volume III) and L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS. No significant impacts of the Project related to bioaccumulation were identified in Section 4.9 of the Draft EIR/EIS.

Response to Comment 92-156

Comment Summary: The comment states that that the data available to design an effective wetland for nitrogen removal are not adequate and may not be applicable to the climatic conditions found in the areas potentially affected by the West County Alternative.

Refer to Responses to Comments 92-153 and 92-154.

Response to Comment 92-157

Comment Summary: The comment states that Appendix I-9 fails to provide an accepted definition of "polishing."

"Polishing" is described on page 8 in Appendix I-9 (Treatment Wetlands Evaluation) of the Draft EIR/EIS as removal of nitrogen down to 1 to 2 mg-N/L.

Response to Comment 92-158

Comment Summary: The comment states that Appendix I-10 is inadequate because it fails to provide any site-specific hydrology studies which would serve as a baseline for existing hydrological conditions.

Dearth et al. is a site-specific hydrology study that is cited in Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternatives) of the Draft EIR/EIS. This study provided suitable information to characterize baseline hydrologic conditions in the Project area.

Response to Comment 92-159

Comment Summary: The comment states that Appendix I-10 "in no way quantifies the amounts, volume, nor impact of" streamflows that are affected by West County irrigation.

The impact of irrigation on surface waters in West County is evaluated in Appendices I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams), I-16 (Water Quality Impacts Analysis Report Volume I - Text) and L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS.

Response to Comment 92-160

Comment Summary: This comment claims the document is inadequate because it fails to consider the impacts on every stream reach where irrigation is expected to occur and because no independent substantiation is provided for using selected stream reach studies as representative of other stream reach conditions.

Stream reaches to be studied in detail were proposed during Project scoping, along with the scope of work and methodology. The rationale for selection of streams and watersheds for detailed analysis is provided in Table 1 of Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternatives) of the Draft EIR/EIS. Impacts to all streams and watersheds were considered; some were done qualitatively and some quantitatively as described in the Appendix I-10. The combined effects of storage and irrigation on flow at many locations in the irrigation area are summarized in the appendix of Appendix L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS. Water quality and aquatic life impacts throughout the irrigation areas are addressed in Appendices I-16 (Water Quality Impacts Analysis Report Volume I - Text) and K-4 (Ecological Risk Assessment), respectively, of the Draft EIR/EIS.

Response to Comment 92-161

Comment Summary: This comment claims there is an unmet data gap in the Draft EIR/EIS because the authors did not use a watershed runoff model and other hydrologic models used to analyze the effect of irrigation practices and return flow are reported in the Draft EIR/EIS to be deficient in their capability to yield reliable measurements.

The comment has quoted, out of context, the explanation of why a particular type of model was not used. This does not mean that irrigation return flow was not evaluated; it was. The study team did not use solely a "runoff model" to evaluate the effects of

reclaimed water irrigation on creek flow, or an "off-the-shelf" groundwater model, which relies on calculations of saturated flow through porous aquifer materials, to estimate groundwater discharge. Little or no runoff is allowed in a reclaimed water irrigation Project, and available groundwater models do not deal with permissive flow very well. The study team developed and calibrated a project specific hydrologic model that uses inflow-outflow parameters including irrigation, rainfall, surface runoff, evapotranspiration, and subsurface groundwater flow to estimate effects of irrigation on waterways. The combined effect of storage and irrigation is evaluated in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS using the models described in Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternatives) of the Draft EIR/EIS. Results may be found in Appendix I-16 (Water Quality Impacts Analysis Report Volume I - Text) of the Draft EIR/EIS.

The alternative approaches referenced in the comment were not utilized for a variety of reasons. Streamflow records are not available for watersheds in the West and South County areas; and it was not considered feasible or appropriate to undertake a multi-year streamflow program for the purposes of this study. A comparative study of flows for a nearby watershed (Salmon Creek) was completed by Dearth, et. al. (1988), in connection with the prior studies of the West County Alternative. This analysis yielded good results for projection of winter runoff flows; but, due to significant watershed differences, the watershed runoff model poorly predicted summer base flows, which are important for the study of the West and South County Reclamation Alternatives.

Watershed runoff models also are ill-equipped to yield reliable estimates of base flow during non-rainfall periods. Finally, all of these possible hydrologic methods, except the water balance method, lack the ability to consider the effect of irrigation practices and return flow, which is of paramount interest for the Santa Rosa reclaimed water study. The water balance methodology was determined to be best suited for the needs of this study and consistent with other traditional means of examining chemical and salt loading water quality changes and groundwater effects associated with irrigation (including reclaimed water) applications to land. However, the run-off regression results developed by Dearth were partially used to verify and calibrate the water balance model.

Response to Comment 92-162

Comment Summary: The comment states that Appendix I-10 does not quantify the effect of irrigation on downstream resources in West County.

Refer to Response to Comment 92-159.

Response to Comment 92-163

Comment Summary: The comment states that Appendix I-10 fails to analyze the relative impacts of irrigation on streamflow for each of the two esteros.

The scope of Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West County Reclamation Alternatives) of the Draft EIR/EIS is identified explicitly on page 1 as being a characterization of flows, where it is also stated that the environmental significance of the flows is evaluated in other reports. The other reports are Appendices I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams), I-16 (Water Quality Impact Analysis Report Volume I - Text) and L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS. Data presented in these reports allow the reader to compare the impacts in the two watersheds.

Response to Comment 92-164

Comment Summary: The comment states that more groundwater information is needed for the Stemple, Americano and Tolay watersheds.

Because there was little existing data, additional groundwater data were collected and are reported in Appendix H-4 (Well Installation and Groundwater Monitoring Results) of the Draft EIR/EIS. Groundwater resources of the area are further characterized in Appendix H-1 (Hydrogeology of Storage/Reuse Areas and Evaluation of Potential Impacts to Groundwater) of the Draft EIR/EIS.

Response to Comment 92-165

Comment Summary: This comment critiques the hydrologic analysis because the document does not state how quickly agricultural return flow would reach waterways.

Page 12 in Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternatives) of the Draft EIR/EIS provides estimates of expected agricultural drainage travel times to waterways. Based on consideration of the soils, the annual hydrograph prepared for the subject watersheds from a regression and some limited flow measurements, travel times of 1 to 4 months are estimated. These numbers are consistent with the information presented on page 3 in Appendix I-2 (Evaluation of Metals in Irrigation-Affected Percolate) of the Draft EIR/EIS.

Response to Comment 92-166

Comment Summary: The comment states that obstructions such as a closed estero sandbar affect rainfall runoff flow and that such obstructions were not considered in "this approach."

Sand bars at estero inlets are not obstructions to runoff since they do not affect flow in streams. The only physical obstructions to flow in the watershed are farm ponds, and these, once full, do not appreciably reduce runoff. The effect of proposed storage reservoirs on runoff was factored into the analysis of stream flow impacts in Appendices I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams), I-16 (Water

Quality Impact Analysis Report Volume I - Text) and L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS.

Response to Comment 92-167

Comment Summary: The comment states that the draft document is inadequate because it does not evaluates the percentage of streamflow which will be agricultural return tail water during the low streamflow months of the dry season.

Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternatives) of the Draft EIR/EIS provides the absolute flows with and without Project impacts under a variety of irrigation and hydrologic conditions for the reader to evaluate as appropriate. The flow information in Appendix I-10 was used as input to the model described in Appendix I-11 (Water Quality Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS and the streamflow output (which was stream flow at particular locations in the watershed) was evaluated for significance in Appendix L-7 (Aquatic Biological Resources Impacts Analysis Report) and Section 4.9 of the Draft EIR/EIS. The flow projections are shown in the appendices of Appendix L-7. The evaluation criterion is a change in flow of 50 percent, and changes of greater than 50 percent area identified in percentage terms in Section 4.9.

Response to Comment 92-168

Comment Summary: The comment states that Appendix I-10 Figure 6 identifies a coastal watershed area that is "outside either the Americano Creek or Stemple Creek watershed" which drains to Estero Americano. The comment states that impacts of irrigation on this watershed area need to be considered.

There is no area on the figure which is identified as being outside the Stemple and Americano Creek watersheds. The impact on the esteros of the maximum potential irrigation acreage in each of the Americano Creek and Stemple Creek watersheds was evaluated, as described in Section 2 of Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS. By the definition of watershed used in the Draft EIR/EIS, no irrigation areas could be located outside the Americano Creek watershed and drain to Estero Americano. All areas proposed for irrigation were considered in the impact evaluation.

Response to Comment 92-169

Comment Summary: The comment states that most summers are cool along the coast and the cool summer irrigation model is more appropriate for evaluating the water balance with the Stemple and Americano watersheds.

The term "cool summer" is defined on page 18 of Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternatives)

of the Draft EIR/EIS as being a condition that results in a 20 percent reduction below normal evapotranspiration in the West County watershed.

Response to Comment 92-170

Comment Summary: The comment states that Appendix I-11 "makes no justification" for restricting the analysis of irrigation and storage impacts to West County streams and Tolay Creek, when other irrigation area streams are likely affected.

The justification for restricting the analysis to particular watersheds is cited in the first sentence of Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS as being the analysis in Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternatives) of the Draft EIR/EIS, which shows that, "irrigation could affect surface water flows in West County streams and Tolay Creek, but not other irrigation area streams."

Response to Comment 92-171

Comment Summary: The comment asks for the degree to which Appendix I-11 evaluates the relative importance of dam seepage and sub-surface migration of irrigation tail water to surface streams with respect to the water quality modeling effort.

Section 2 in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS indicates that dam seepage and subsurface irrigation are both fully considered. Tables 2 through 5 on pages 4 through 10 in Appendix I-11 show the relative magnitude of seepage and irrigation flows explicitly.

Response to Comment 92-172

Comment Summary: The comment states that justification is needed for assumption in Appendix I-11 that runoff in the West County reservoir sites will flow into the impoundment with no downstream flow or water quality ramifications.

Page 3 in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS states that "with the exception of Tolay A, Tolay C, Sears Point, and Adobe Road, all runoff tributary to each dam site is assumed to flow into the impoundment with no direct downstream flow or water quality ramifications. For the Tolay and Adobe watershed, the drainage from the watershed above the Sears Point and Tolay C dam sites is assumed intercepted and pumped around the reservoir." The EIR/EIS authors do not believe that justification that a dam impounds and hinders downstream flow of water is necessary. Water quality impacts in the esteros of the altered hydrologic regime are evaluated in Section 6 of Appendix I-16 (Water Quality Impacts Analysis Volume I - Text), and resulted in Impact 6.5.3 as described on page 4.6-84 in the Draft EIR/EIS. As noted in Response to Comment 92-171, seepage from the reservoir is discussed in the Draft EIR/EIS.

Response to Comment 92-173

Comment Summary: The comment asks why West County dams do not require diversion structures, while South County dams do.

The criteria for determining which reservoirs require diversion structures are provided on page 2 in Appendix D-17 (Reservoir Stormwater Runoff Diversion Structures) of the Draft EIR/EIS. Cost estimates were developed for the alternatives as they are defined in Section 3.3 in the Draft EIR/EIS. West County reservoirs are in much smaller watersheds than the South County reservoirs, and therefore runoff can be accommodated in the reservoir without the need for diversion.

Response to Comment 92-174

Comment Summary: The comment states that the Draft EIR/EIS provides no feasible mitigation for the impacts from seepage of stored reclaimed water with low dissolved oxygen.

Feasible mitigation is included in the Draft EIR/EIS as Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen on page 2-125 of the Draft EIR/EIS. The comment does not specify why the measure is infeasible.

Response to Comment 92-175

Comment Summary: The comment states that enhancing natural roughness characteristics of natural creeks as suggested in Appendix I-11 is not mitigation and would have impacts that would need to be mitigated.

Modifying the roughness of the stream to mitigate depleted dissolved oxygen is mentioned in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS but is not included in the Project as mitigation for this impact. Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen, described on page 2-125 of the Draft EIR/EIS addresses this impact.

Response to Comment 92-176

Comment Summary: The comment states that the Bloomfield storage reservoir seepage rate and the downstream water quality impacts of seepage are not explained.

The source of seepage estimates is cited on page 2 in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS as Parsons Engineering Science (1996). The latter technical report is contained in Appendix H-1 (Hydrogeology of Storage/Reuse Areas and Evaluation of Potential Impacts to Groundwater) of the Draft EIR/EIS. Methodology for calculating seepage is shown in Table 5-4 of Appendix H-1. The seepage is highest for the Bloomfield Reservoir because the dam is higher and longer than any of the other reservoir sites. The downstream

implications are evaluated in Appendix I-16 (Water Quality Impacts Analysis Report Volume I - Text) and L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS.

Response to Comment 92-177

Comment Summary: The comment states that the document does not provide mitigation measures for downstream impacts on nitrogen and metals.

Measures that reduce nitrogen and metals impacts include Mitigation Measures 2.2.1 through 2.2.12 on pages 2-21 through 2-43, and 2.5.1 through 2.5.3 on pages 2-121 through 2-125 of the Draft EIR/EIS.

Response to Comment 92-178

Comment Summary: The comment states that the document fails to suggest mitigation for the dissolved oxygen impact of the Bloomfield reservoir.

Feasible mitigation is included in the Draft EIR/EIS as Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen on page 2-125.

Response to Comment 92-179

Comment Summary: The comment states that the analysis of irrigation impacts is based on only the low-tech cropping scenario and that this approach is inconsistent with the evaluation of cost vs. benefits which tends to emphasize the high-tech cropping scenario.

The comment is based on the incorrect premise that the analysis of impacts is based on the normal or low-tech cropping scenario. The full range of irrigation and hydrologic scenarios are simulated in the model described on page 15 in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS, and the analyses of impacts in Appendices I-16 (Water Quality Impacts Analysis Report Volume I - Text) and L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS consider the full range of cropping scenarios.

Response to Comment 92-180

Comment Summary: The comment states that acknowledgment of a lack of data in Appendix I-10 and providing the information in Appendix I-11 renders Appendix I-11 inadequate.

Because flow resulting from winter irrigation was not estimated in Appendix I-10 (Baseline Hydrology and Irrigation Drainage Evaluation for West and South County Reclamation Alternative) of the Draft EIR/EIS; the estimates were presented in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS. The method for estimating flow resulting from winter irrigation is

described in the last sentence of the fourth paragraph on page 13 in Appendix I-11. The comment does not support any contention that the method is inappropriate.

Response to Comment 92-181

Comment Summary: The comment states that the Draft EIR/EIS does not support the claim that the Stemple Creek watershed may exceed the required acreage for the 1, 5 and 10 percent design discharge scenarios.

The justification for the determination of suitable Stemple watershed irrigation acreage is provided in Appendix E-2 (Irrigation Suitability Land Classification-West County Area) of the Draft EIR/EIS.

Response to Comment 92-182

Comment Summary: The comment states that "the data suggest strongly that the [water quality] model, even when modified, does not fit the conditions in the Estero de San Antonio."

The model applied to Estero de San Antonio was configured according to the morphometry of the Estero de San Antonio as measured in the field. Based on the information in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams), the professional opinion of the EIR/EIS authors is that the model is suitable for the task for which it was used. The comment offers no substantiation for the claim that the model "does not fit."

Response to Comment 92-183

Comment Summary: The comment states that the assumption that flow is constrained to a single channel is an oversimplification which discredits model validity.

The assumption that primary flow is within a single channel reflects reality. Only at high tide does an island split flow, and this occurs in one location in Estero Americano and two locations in Estero de San Antonio. Field observations indicate that the majority of flow follows the low flow channel, as would be expected based on known hydraulic principles. The channel width is highly variable, especially in Estero Americano, and width information was factored into the model application for both esteros.

Response to Comment 92-184

Comment Summary: The comment states that the model assumes uniform water quality is maintained with depth and does not account for surface microlayer transport of pollutants.

The surface microlayer phenomenon is not modeled, but the density stratification (freshwater floating on top of salt water) was evaluated, as described beginning on page 17 of Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams)

of the Draft EIR/EIS. As stated there, because the esteros do not exhibit uniform water quality with depth "the model was modified to approximate the hydrodynamic and water quality effects of stratification."

Response to Comment 92-185

Comment Summary: The comment states that dissolved oxygen stratification was more pronounced in the simulation results than in the observed data and this suggests flaws in the model.

The EIR/EIS authors consider the model to be an appropriate tool to evaluate potential Project impacts and compare irrigation impacts under different conditions. The comment correctly points out that the model does not perfectly estimate actual conditions, and the EIR/EIS authors provided the calibration information that is the subject of this comment as a means of characterizing the uncertainty of the model output. Modeling is by definition a simplified representation of real-world phenomena, and the results provide an indication of impacts as input variables are changed.

Response to Comment 92-186

Comment Summary: The comment states that Appendix I-11 is inadequate because of the assumption that observations other than dissolved oxygen were representative of the entire water column.

The basis for the assumption that non-dissolved oxygen observations were representative of the entire water column is described on page 17 in Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams), and in Appendix I-3 (Environmental Conditions in West County Waterways) of the Draft EIR/EIS. The basis is that observations (a term which describes actual measurements in the field as reported in Appendices I-3 and I-11) show that constituents other than dissolved oxygen and salinity are not variable according to depth. The EIR/EIS authors therefore disagree that this assumption is inappropriate.

Response to Comment 92-187

Comment Summary: The comment states that the model does not account for surface microlayer transport of pollutants.

This comment is a correct statement of fact. Refer to Response to Comment 92-184.

Response to Comment 92-188

Comment Summary: The comment states that the Estero Americano sand bar will no longer be maintained in an open condition due to a Sanctuary management policy change, and the model is based on assumptions about the bar when it was maintained in an open condition.

The comment about changing Sanctuary policy about permitting maintenance of the sand bar is consistent with the EIR/EIS authors' understanding of the matter. The comment is not specific about which modeling assumptions, if any, are inappropriate for simulation of conditions in the bar-closed condition. The model was developed to simulate water quality conditions in the bar-open and bar-closed situation. The comment that calibration was done only under the bar-open conditions is correct. This limitation was imposed by management practices prior to the change in Sanctuary policy and by nature after the Sanctuary policy change (i.e., the bar did not close during the study period).

The authors do not agree that a lack of calibration renders the model output under bar-closed conditions inadequate. Model calibration consisted of adjusting model parameters which control estuary hydraulic and water quality parameter dynamics such that field observations are approximated. Hydrologic conditions (including entrance conditions) during calibration are approximations of unique historical events. Hydrologic conditions are constantly changing so it is impossible to calibrate to all combinations which one can envision. However, the fundamental assumption implicit in the estuary modeling process is that flow, velocity and depth can be computed from flow and stage boundary conditions and program code which computes the hydrodynamic response based on well accepted formulations representing hydraulic behavior. Changing boundary conditions (such as the tidal boundary condition associated with entrance condition) does not invalidate this assumption. In a similar fashion, the water quality response is represented by model formulations which mimic observed responses. The water quality model relationships consider flow rate and velocity, depth, surface area, etc.; therefore, changing hydrologic boundary conditions does not invalidate the model. Also refer to Master Response 5, located in Section 6.2 of this document, concerning use of data.

Response to Comment 92-189

Comment Summary: The comment states that the model is flawed because it appears to be based on derived rather than measured flow in Stemple and Americano Creeks.

Refer to Response to Comment 92-158. The comment does not substantiate the contention that the method for estimating creek flows flaws the estero model. The EIR/EIS authors accept the flow estimate as being within the range of flows that occur in Stemple and Americano Creeks. Since impacts on the esteros cannot feasibly be modeled and results presented for every possible creek flow condition, the estimate of creek flow is considered as useful as actual data for this purpose.

Response to Comment 92-190

Comment Summary: The comment states that the watershed area:estero volume ratios are different for the two esteros, and that runoff from a particular storm event will not be uniform between the two watersheds.

The comment's characterization of the rainfall uniformity assumption is correct. The comment fails to substantiate how such an assumption adversely affects the utility of

model output. Modeling is by definition a simplified representation of real-world phenomena, and the results provide an indication of impacts as input variables are changed. A non-uniform rainfall distribution will result in slightly different flows than were modeled under the uniform rainfall assumption. The flows that were modeled were represented as typical of wet and dry season conditions, not as an exact simulation of any particular rainfall storm or pattern.

Response to Comment 92-191

Comment Summary: The comment states that Appendix I-11 is inadequate because it acknowledges that insufficient data for bar-closed calibration are available and then fails to recognize that artificial opening of the bar is no longer permitted.

Refer to Response to Comment 92-188 regarding the calibration comment. The scope of Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS is to describe the model used to simulate Project impacts under bar-open and bar-closed conditions. The factors affecting bar condition are not relevant to this simulation. Section 4.6 and Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS (where the model output is evaluated for impact significance) recognizes the fact that the bar condition changes, and that the Estero Americano bar is no longer artificially opened.

Response to Comment 92-192

Comment Summary: The comment states that the assumption that 33 and 93 acres of riparian corridor exist in Stemple and Americano watershed, respectively will reduce the incremental nitrogen load resulting from Project irrigation is unsubstantiated.

The scope of Appendix I-11 (Water Quality and Flow Model for Irrigation/Storage Area Streams) of the Draft EIR/EIS is to describe the model used to simulate Project impacts under bar-open and bar-closed conditions, not to repeat analyses provided elsewhere in the Draft EIR/EIS. Justification for the 33- and 93-acre estimate is provided on pages 196 and 197 in Appendix I-16 (Water Quality Impact Analysis Report Volume I - Text) of the Draft EIR/EIS.

Response to Comment 92-193

Comment Summary: The comment states that Appendix I-5 (Irrigation Storage Streams Water Quality Monitoring Results) fails to incorporate in the baseline assumptions for the Stemple Creek corridor projects planned or completed by groups such as the Soil Conservation Service, Gold Ridge RCD, the Shrimp Club, and the California Coastal Conservancy within this watershed.

The plans and programs described in the comment were incorporated into the baseline assumptions for the watershed to the extent each has been implemented and affected

environmental conditions that were measured in the field. Future plans and projects by definition are not part of baseline conditions.

Response to Comment 92-194

Comment Summary: The comment states that the Final EIR/EIS must substantiate the assumption that both esteros become nearly fresh during high flow periods.

Refer to Response to Comment 92-144.

Response to Comment 92-195

Comment Summary: The comment states that the Appendix I-12 (Development of Evaluation Criteria for Potential Water Quality Impacts) "fails to recognize and propose compliance methodologies with the relevant anti-degradation regulatory statutes."

The approach to compliance with the anti-degradation policy is described on page 4.6-4 of the Draft EIR/EIS.

Response to Comment 92-196

Comment Summary: The comment states that Appendix I-12 "fails to indicate how it arrives at a 10 percent" point of significance for biostimulatory substances.

Refer to Response to Comment 8-9.

Response to Comment 92-197

Comment Summary: The comment states that "no effective mitigation measures are identified in the document" for water quality impacts in the Sanctuary.

Measures that reduce Project impacts on the Sanctuary include Measures 2.2.1 through 2.2.12 on pages 2-21 through 2-43, and 2.5.1 through 2.5.3 on pages 2-21 through 2-125 of the Draft EIR/EIS. Refer to Response to Comment 92-91 for additional explanation.

Response to Comment 92-198

Comment Summary: The comment states that anadromous fish studies were conducted for discharge impacts but were completely omitted for the irrigation impacts in West and South County. The comment also states that anadromous fish should be studied in West and South County areas to a level equal to that in the Russian River watershed.

The comment about "completely omitting" anadromous fish studies in West and South County project areas is factually incorrect. Appendices I-3 (Environmental Conditions in West County Waterways) and L-4 (Aquatic Habitat Survey Results) of the Draft EIR/EIS describe such study. The EIR/EIS authors do not agree with the assertion that the different level of anadromous fish study in the West and South County project areas

versus the Laguna/Russian River area is inappropriate. Appendices I-3 and L-4 show that only three individual steelhead trout were found in all of West and South County project areas in three years. In contrast, hundreds of steelhead trout and an unknown number of federally protected coho salmon migrate through the Laguna/Russian River area that will receive discharge of reclaimed water under the Project alternatives. The Draft EIR/EIS authors consider the level of anadromous fish study in each project area to be consistent with the resource present and the potential for Project adverse impacts, and therefore appropriate and consistent with the requirements of NEPA and CEQA.

Response to Comment 92-199

Comment Summary: The comment says that Appendix L-3 is not up-to-date and more current information should be included in the Draft EIR/EIS.

Appendix L-3 (Potential Listing of Coho Salmon and Steelhead Trout) of the Draft EIR/EIS included current information at the time of publication concerning the status of coho salmon and steelhead. Refer to Responses to Comments 1-11, 1-14, 1-15, and 47-15 and Master Response 12, located in Section 6.2 of this document, concerning the current status of coho salmon and steelhead trout.

Response to Comment 92-200

Comment Summary: The comment suggests that the Final EIR/EIS explain project contingencies for listing of coho salmon and steelhead prior to project selection, and consider what the economic and retrofit implications for a particular project element might be should either of these species be listed under ESA (Endangered Species Act) subsequent to construction and implementation of a particular project alternative.

The coho salmon was analyzed as a federally proposed threatened species in the Draft EIR/EIS. Impacts to federally proposed species were assessed in the same manner (i.e., using the same points of significance) as federally-listed species in the Draft EIR/EIS. Therefore, the current change in status will not effect the impact analysis conducted for coho salmon. Master Response 12, located in Section 6.2 of this document, includes all the changes in the impact analysis and mitigation that address steelhead trout.

The Draft EIR/EIS is intended to disclose significant environmental effects. Project evaluation criteria and points of significance were developed to be consistent with both the Federal and State Endangered Species Acts (refer to pages 4.9-34 through 4.9-38 of the Draft EIR/EIS). In addition, resource agencies such as the U.S. Fish and Wildlife, National Marine Fisheries Service, and the California Department of Fish and Game Service were consulted during the development of the points of significance.

Response to Comment 92-201

Comment Summary: The comment states that the Draft EIR/EIS does not adequately consider the presently-listed ESA species.

Based on review of Attachment J to Comment Letter 92 (*Press Democrat* article concerning the steelhead trout status change), the EIR/EIS authors assume that this comment is in reference to the steelhead trout. Refer to Master Response 12, located in Section 6.2 of this document, for a complete discussion on the legal status of steelhead trout.

Response to Comment 92-202

Comment Summary: The comment states that Appendix L-4 fails to identify estuarine habitat as an aquatic habitat to be studied.

The comment that Appendix L-4 (Aquatic Habitat Survey Results) of the Draft EIR/EIS does not address estuaries is correct. The habitat surveys reported in Appendix L-4 were conducted to supplement existing information about the distribution of habitat in the Project area. For example, little was known about habitat at some of the storage sites prior to Project studies such as that reported in Appendix L-4. In contrast, much was known about the estuaries and additional surveys to identify habitat location and characteristics of the estuaries was deemed unnecessary. Project impact on estuaries is evaluated in Appendices I-16 (Water Quality Impacts Analysis Report Volume I - Text) and L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS.

Response to Comment 92-203

Comment Summary: The comment contends that the Draft EIR/EIS does not provide recent evidence regarding presence/absence of California freshwater shrimp in the Americano Creek watershed.

The assertion that California freshwater shrimp have been extirpated from Americano Creek is based on conversations with Bill Cox of the California Department of Fish and Game and Larry Serpa, a noted invertebrate specialist with The Nature Conservancy. Also refer to Response to Comment 85-349.

Response to Comment 92-204

Comment Summary: The comment states that describing habitat in terms of the degradation from a natural condition that has occurred represents a bias.

The EIR/EIS authors disagree with the opinion that describing habitat in terms of the degradation that has occurred in relation to a natural condition represents a bias or is in any way not objective. No mention of riparian restoration projects is made in Appendix L-4 (Aquatic Habitat Survey Results) of the Draft EIR/EIS because Appendix L-4 reports on habitat conditions, not on the projects and plans that may affect habitat. Refer also to Response to Comment 92-193.

Response to Comment 92-205

Comment Summary: The comment refers to Appendix L-4 and states that "no consistent standard for determination of significance thresholds for sensitive species is established."

Evaluation criteria and points of significance for sensitive species are established in Appendix L-7 (Aquatic Biological Resources Impacts Analysis Report) and Section 4.9 of the Draft EIR/EIS.

Response to Comment 92-206

Comment Summary: The comment states that no evidence of a "take permit for the capture of Tidewater Goby or Syncaris pacifica is provided," and "this information must be provided in the Final EIR/EIS."

Tidewater goby specimens were collected (and released) by consultants to the City from 1988 until 1991, and the tidewater goby was not protected by the federal Endangered Species Act at that time, so no take permit was required. No tidewater goby collections have been made by consultants to the City of Santa Rosa since then. Surveys for the California freshwater shrimp (*Syncaris pacifica*) were made by Mr. Larry Serpa of the Nature Conservancy, as reported on page 94 in Appendix K-4 (Ecological Risk Assessment) of the Draft EIR/EIS. Mr. Serpa is one of three scientists with a permit for sampling of the California freshwater shrimp, and the current status of his permit was verified prior to field collections. The EIR/EIS authors are aware of no requirement to provide evidence in the Draft EIR/EIS that take permits were in the possession of field personnel at the time of sampling.

Response to Comment 92-207

Comment Summary: The comment refers to Appendix L-5 and states that tributary 2 at the Two Rock site is perennial and that this should be identified as such in Appendix L-5 Table 2.

Table 2 on page 7 in Appendix L-5 (Aquatic Life Survey Results) of the Draft EIR/EIS describes all of the streams at the Two Rock site as perennial.

Response to Comment 92-208

Comment Summary: The comment states that Appendix L-6 fails to consider the impact of increased contaminant loading that could result from increased use of the expanded plant facilities by larger numbers of dischargers.

As stated in the first paragraph of Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS, the report is a summary of information collected at Kelly Farm Demonstration Wetland; it is not an evaluation of Project impacts. Project impacts due to

increased discharge are evaluated in Appendices I-13 (Sediment Quality Characterization and Impacts Assessment), I-16 (Water Quality Impact Analysis Report Volume I - Text), J-3 (Human Health Risks from Chemical and Biological Components of Reclaimed Water) and K-4 (Ecological Risk Assessment), and in Sections 4.6, 4.7 and 4.9 of the Draft EIR/EIS.

Response to Comment 92-209

Comment Summary: The comment states that Kelly Farm Demonstration Wetland provides none of the range of natural conditions that would be found in the esteros, and evidence from Kelly Farm Demonstration Wetland is not transferable to natural wetlands and estuaries.

Data from Kelly Farm Demonstration Wetland were not used to evaluate bioaccumulation in the esteros. Refer to Appendix K-4 (Ecological Risk Assessment) of the Draft EIR/EIS.

Response to Comment 92-210

Comment Summary: The comment refers to Appendix L-6 page 1 and states that Appendix L-6 is inadequate because bioaccumulation of copper in crayfish at Kelly Wetland is "rationalized . . . as a phenomenon that can be expected."

The EIR/EIS authors consider the comment to reflect a misunderstanding of the report. Copper accumulation in crayfish is necessary for crayfish survival, as copper is the key element of a respiratory pigment in crayfish (similar to iron in hemoglobin in humans). This fact is given in the same sentence on page 1 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS that is quoted out of context in the comment. The statement does not discount the importance of copper in crayfish, but explains it. Appendix L-6 does not report on an evaluation of Project impacts, but only reports data for use in the evaluation of impacts that is presented in Appendices I-13 (Sediment Quality Characterization and Impacts Assessment) and K-4 (Ecological Risk Assessment) of the Draft EIR/EIS.

Response to Comment 92-211

Comment Summary: The comment refers to Appendix L-6 page 1 and states that zinc and mercury accumulation in mosquitofish and crayfish is discounted in Appendix L-6 as not significant without explanation.

Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS does not report on an evaluation of Project impacts, but only reports data for use in the evaluation of impacts that is presented in other reports. Thus there are no conclusions regarding significance in Appendix L-6. The significance of zinc and mercury impacts is evaluated in Appendices

I-16 (Water Quality Impact Analysis Report Volume I - Text) and K-4 (Ecological Risk Assessment) of the Draft EIR/EIS.

Response to Comment 92-212

Comment Summary: The comment refers to Appendix L-6 page 1 and states that no conclusions about the possible bioaccumulation of zinc are provided.

This comment refers to the summary of Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS which, as stated in Response to Comment 92-211 does not report on impacts. The significance of the bioaccumulation data are evaluated in Appendix K-4 (Ecological Risk Assessment) of the Draft EIR/EIS.

Response to Comment 92-213

Comment Summary: The comment states that the evaluation of arsenic and mercury Appendix L-6 page 7 "fails to recognize that perhaps the levels of arsenic and mercury in the sediment of Kelly Farm Demonstration Wetland are accumulating over time. . . . "

The comment refers to an alleged failure on page 7 of Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS to account for the possibility that mercury and arsenic may be accumulating at Kelly Farm Demonstration Wetland. Page 7 in Appendix L-6 contains a map and no text. Page 2 in Appendix L-6 recognizes the potential for mercury and arsenic accumulation in Kelly Farm Demonstration Wetland, stating that "the increase may be due to continued loading from reclaimed water."

Response to Comment 92-214

Comment Summary: The comment states that Appendix L-6 fails to explain why Musselwatch data are highly variable between stations and fails to determine whether pesticide applications (which are identified in Appendix L-6 as a source of variability) are connected with wastewater irrigation.

The relevance of highly variable pesticide concentrations in musselwatch clam tissues and a potential cause such as agriculture, that is facilitated by the existing irrigation system, is not evident from the comment. The Draft EIR/EIS does not evaluate the impact of existing Subregional System irrigation operations. The impact of agricultural pesticide applications on irrigation lands in the Project area is addressed in Appendix K-4 (Ecological Risk Assessment) of the Draft EIR/EIS. The scope of Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS is to summarize existing information about bioaccumulation, and the EIR/EIS authors consider Appendix L-6 to be adequate in this regard.

Response to Comment 92-215

Comment Summary: The comment states that Appendix L-6 does not indicate a realistic reason why metals in crayfish may be overestimated.

The reasons provided in the second paragraph of page 9 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS relate to the natural process of metal sequestration in exoskeleton and lack of depuration (excretion of gut contents prior to chemical analysis) prior to analysis. The comment does not indicate why these possible explanations are not realistic.

Response to Comment 92-216

Comment Summary: The comment states that Appendix L-6 is inadequate because it fails to provide any detailed explanation of biomagnification and bioaccumulation as part of the exposure pathway and receptors discussion.

The comment is correct that page 10 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS does not provide a detailed explanation of biomagnification and bioaccumulation. However, explanations are provided elsewhere in Appendix L-6. The terms biomagnification and bioaccumulation are defined in the Introduction to Appendix L-6 (refer to page 4). The measured extent of biomagnification and bioaccumulation at Kelly wetland is the subject of Section 7 on page 32 in Appendix L-6.

Response to Comment 92-217

Comment Summary: The comment states that aquatic life objectives should be used as a point of significance instead of apparent effects thresholds.

The EIR/EIS authors disagree with this comment that aquatic life objectives should be used exclusively as a point of significance instead of apparent effects thresholds. Project impacts were evaluated for significance in the Draft EIR/EIS using both aquatic life objectives and apparent effects thresholds. Aquatic life objectives are expressed as a concentration of a constituent in water and were established by EPA to protect aquatic life from toxicity. Aquatic life objectives are used in the Draft EIR/EIS as the basis for evaluating the impacts of the Project on water quality, as described in Appendix I-12 (Development of Evaluation Criteria for Potential Water Quality Impacts), Appendix I-16 (Water Quality Impacts Analysis Report Volume I - Text) and Section 4.6 of the Draft EIR/EIS. Apparent effects thresholds are expressed as the constituent concentration in a variety of media including water, sediment and prey organisms as described in Appendix K-4 (Ecological Risk Assessment) of the Draft EIR/EIS, and were used as a basis for benchmarks and evaluating significance of impacts on aquatic life as described in Appendix K-4 and in Section 4.9 of the Draft EIR/EIS.

Response to Comment 92-218

Comment Summary: The comment states that the benchmarks for effects on terrestrial plants in Appendix L-6 of the Draft EIR/EIS are inapplicable.

The EIR/EIS authors disagree with the characterization of these benchmarks as inapplicable and as having been derived solely from hazardous material assessments. As noted in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS, the basis for benchmarks used in the Draft EIR/EIS is the subject of Section 5 in Appendix K-4 (Ecological Risk Assessment). Page 5-1 in Appendix K-4 cites the basis of the benchmarks as Opresko et al. (1994) and Will and Suter (1994a, 1994b). Page 5-1 states that "these screening benchmarks identify soil concentrations with low potential for effects on biota, based on toxicological data for several test organisms." The EIR/EIS authors consider this basis to be appropriate and no evidence to the contrary is provided in the comment.

Response to Comment 92-219

Comment Summary: The comment states that Appendix L-6 fails to assign the responsibility for the greatly increased aluminum in mosquitofish to any particular source.

The explanation of aluminum concentration changes from 1991 to 1994 that the comment states is absent from the report is provided on page 28 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS. As stated there, "The increase in the aluminum concentration in mosquitofish in 1994 relative to 1991 may be due to the increase in the average concentration in aluminum in reclaimed water between 1991 and 1994. However, the increase in reclaimed water concentration was not reflected in sediments and vegetation which decreased between 1991 and 1994."

Response to Comment 92-220

Comment Summary: The comment states that Appendix L-6 does not explain the arsenic concentration increase at Kelly Wetland.

The explanation of arsenic concentration changes from 1991 to 1994 that the comment states is absent, is provided in Section 6.3 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS, where there is an extensive discussion of both arsenic and mercury on page 28. While sediment levels of arsenic increased between 1991 and 1994, levels in reclaimed water decreased.

Response to Comment 92-221

Comment Summary: The comment states that Appendix L-6 fails to assign the responsibility for the increased chromium in mosquitofish to any particular source.

The comment is correct in that the cause of the apparent increase of chromium concentration in mosquitofish is not described.

The following changes are made to the Draft EIR/EIS:

Page 31, Appendix L-6. The following is added to the end of the last paragraph:

> Temporal trends in metals concentration for mosquitofish largely mirrored those observed in crayfish tissues for mercury and nickel (lower concentrations in 1994 than in 1991), and for copper, lead, and silver (increased concentrations in 1996). Aluminum and chromium concentrations in mosquitofish, unlike crayfish, increased in 1994 relative to the previously collected data. The above explanation for aluminum and chromium changes in sediment would also apply to biota. The lead concentration increased in both mosquitofish and crayfish, and may be the result of the slightly increased lead concentration in reclaimed water from 1991 to 1994.

Response to Comment 92-222

Comment Summary: The comment states that Appendix L-6 fails to assign the responsibility for the increased lead in mosquitofish and crayfish to any particular source.

Refer to Response to Comment 92-221.

Response to Comment 92-223

Comment Summary: The comment states that Appendix L-6 fails to assign the responsibility for the increased mercury in sediment to any particular source.

The explanation of mercury concentration changes from 1991 to 1994 that the comment states is absent, is provided on page 28 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS, where there is an extensive discussion of both arsenic and mercury. While sediment levels of mercury increased between 1991 and 1994, levels in reclaimed water did not change.

Response to Comment 92-224

Comment Summary: The comment states that Appendix L-6 fails to assign the responsibility for the increased silver in all tissue types to any particular source, and states that photographic and industrial sources should be identified as possible sources.

The explanation of silver concentration changes from 1991 to 1994 that the comment states is absent, is provided on page 28 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS. As stated there "The increase in silver and copper concentrations in plants is not likely due to changes in reclaimed water since the average concentrations of both copper and silver in reclaimed water were lower in 1995 than 1991". Refer also to Response to Comment 85-119.

Response to Comment 92-225

Comment Summary: This comment states that Appendix L-6 is inadequate in that it fails to assign the responsibility for the increased levels of concentrations of aluminum, chromium, and lead in reclaimed water from 1991 to 1994 to any potential source.

The scope of Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS is to summarize existing information about bioaccumulation, and the EIR/EIS authors consider Appendix L-6 to be adequate in this regard. Identifying why the concentration of a particular constituent changes in reclaimed water is not within the scope of Appendix L-6. Although the average concentrations of these three metals in reclaimed water are higher in 1994 than in 1991, an examination of the 4 years - 1991, 1992, 1993, and 1994 reveals no trend toward increased concentrations in reclaimed water. Refer to Table 18 on page 31 in Appendix L-6.

Response to Comment 92-226

Comment Summary: The comment states that Appendix L-6 fails to identify mitigation measures such as source reduction for arsenic and mercury in sediment.

The scope of Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS is to summarize existing information about bioaccumulation, and the EIR/EIS authors consider Appendix L-6 to be adequate in this regard. Mitigation for significant bioaccumulation impacts is found in Section 2 of the Draft EIR/EIS (e.g., Mitigation Measure 2.4.16: Ecological Risk Monitoring and Source Control Program on page 2-119).

Response to Comment 92-227

Comment Summary: This comment states that Appendix L-6 is inadequate because it does not explain the increase in silver and copper levels in plant tissues other than to state that it was not likely due to changes in reclaimed water.

Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS provides explanation of why the increase was not likely due to reclaimed water (since the concentrations in reclaimed water and in sediments were apparently lower in 1994). An

explanation of what did cause the increase in silver and copper levels in plant tissues was not included because the EIR/EIS authors do not know what caused the increase.

Response to Comment 92-228

Comment Summary: This comment states that Appendix L-6 is inadequate in that it fails to assign the responsibility for the increased levels of concentrations of aluminum in mosquito fish from 1991 to 1994, in spite of an increase in the average concentration in aluminum in reclaimed water during the same period of time.

Page 28 of Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS states that the increase in the aluminum concentration in mosquito fish in 1994 relative to 1991 may be due to the increase in the average concentration in aluminum in reclaimed water between 1991 and 1994.

Response to Comment 92-229

Comment Summary: The comment states that bioaccumulation of copper, zinc and mercury was not explained.

Refer to Responses to Comment 92-210 and 92-211.

Response to Comment 92-230

Comment Summary: The comment states that Appendix L-6 page 36 states that there is not a trend toward bioaccumulation of metals, and the comment states that page 36 then immediately contradicts itself by stating that copper is an exception to this statement.

The EIR/EIS authors do not agree with the conclusion in the comment that the second paragraph on page 36 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS is self-contradictory. Bioaccumulation of copper in crayfish is normal and natural, and thus not an exception to the conclusion that no trend of metals accumulation was observed at the Kelly wetland. Also refer to Response to Comment 92-210.

Response to Comment 92-231

Comment Summary: The comment states that Appendix L-6 identifies "significant exceptions to the 'no increase' statement," and fails to explain the importance of such exceptions.

The EIR/EIS authors do not agree with the characterization that aluminum, chromium and copper results are exceptions to a general conclusion of no tissue burden increase due to the reclaimed water discharge. The first paragraph on page 53 in Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS defines the criteria that must be

met for differences in clam tissue burdens above and below the discharge to be considered indicative of a discharge related impact, and the criteria are not met for any of the constituents. The comment does not provide any substantiation that the discharge is causing bioaccumulation.

Response to Comment 92-232

Comment Summary: The comment states that no source reduction strategy for Lindane is suggested.

The scope of Appendix L-6 (Evaluation of Bioaccumulation in Organisms Exposed to Reclaimed Water from the Santa Rosa Subregional System) of the Draft EIR/EIS is to summarize existing information about bioaccumulation, and the EIR/EIS authors consider Appendix L-6 to be adequate in this regard. As discussed on page 53 of Appendix L-6, "The lack of a relationship between concentration in reclaimed water discharge and concentration in clam tissues indicates another source of BHC (Lindane) may be present in the Laguna watershed. A likely source if from pesticide application." Because there is no evidence that the source of Lindane is reclaimed water, it is not appropriate or necessary to develop mitigation for Lindane as part of the Long-Term Project.

Response to Comment 92-233

Comment Summary: The comment states that the "Draft EIR/EIS fails to consider the full range of evaluation criteria, limiting itself instead only the determination of impact significance based on physical lineal feet of stream impacted. The comment also states that this makes no adjustment or accommodation for the fact that various segments of streams may have relatively more or less importance as habitat for various aquatic organisms."

The EIR/EIS authors disagree with the characterization that the evaluation approach does not account for habitat importance. As defined on page 2 in Appendix L-4 (Aquatic Life Survey Results) of the Draft EIR/EIS, aquatic habitat types were defined based on their basic type (warm and cool water) and their characteristics (A and B). The point of significance varies by habitat as described on page 5 in Appendix L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS. No specific changes to the evaluation criteria or points of significance were offered in the comment as alternatives to those used in the Draft EIR/EIS.

Response to Comment 92-234

Comment Summary: The comment states that unprotected species and species with pending protection status (including the coho salmon and steelhead) that are native to project area streams were not evaluated.

Appendices I-3 (Environmental Conditions in West County Waterways), L-1 (Anadromous Fish Migration Study Program, 1991-1994), L-2 (Anadromous Fish

Migration Study Program, 1991-1995), and L-5 (Aquatic Life Survey Results) of the Draft EIR/EIS describe the aquatic species, regardless of protection status, that were found in surveys. Coho salmon and steelhead are considered in each of these technical reports. The Project impact on protected and nonprotected species was evaluated according to criteria described in Section 4.7 of the Draft EIR/EIS. Several criteria relate to habitat protection, which protects both protected and nonprotected species.

Response to Comment 92-235

Comment Summary: The comment states that the Draft EIR/EIS claims that "only professional judgment of the preparers need be considered" as the basis for points of significance.

The Draft EIR/EIS does not say or imply that "only professional judgment of the preparers need be considered" as the basis for points of significance. The process of establishing quantitative points of significance is not often employed in NEPA and CEQA documentation. For some of the points of significance, numeric regulatory standards are a sufficient basis (e.g., drinking water MCLs and aquatic life criteria). For other of the points of significance, little precedent exists so proposing a point of significance was incumbent on the EIR/EIS authors. Such points of significance were developed through consultation with agencies and in a series of public roundtable meetings described in Response to Comment 92-5. The EIR/EIS authors do not consider the points of significance to be ambiguous; in fact, the authors consider the points of significance to be unambiguous and an objective basis for evaluating the significance of impacts. No alternative points of significance are suggested in the comment. No specific changes to the evaluation criteria or points of significance were offered in the comment as alternatives to those used in the Draft EIR/EIS.

Response to Comment 92-236

Comment Summary: The comment expresses disagreement with the finding that West County dams would not block a migratory corridor.

No substantiation of a self-sustaining anadromous fish run to any of the storage sites was found by the EIR/EIS authors, nor has any such substantiation been provided in the comment. Refer to Response to Comment 1-12.

Response to Comment 92-237

Comment Summary: This comment states that the Draft EIR/EIS does not provide for mitigation measures which can maintain the existing salinity regime in Estero Americano and Estero de San Antonio. The impacts on the "few species adapted only to the brackish environment" are not adequately identified and discussed.

Measures that reduce Project impacts on the Sanctuary include Mitigation Measures 2.2.1 through 2.2.12 on pages 2-21 through 2-43 and, 2.5.1 through 2.5.3 on pages 2-121

through 2-125 in the Draft EIR/EIS. Refer to Responses to Comments 92-84 and 92-91 for additional explanation. These mitigation measures cannot prevent changes to the existing salinity regime in the esteros, however.

The statement in the Draft EIR/EIS that a "few species [are] adapted only to the brackish environment" (pages 4 and 5 in Appendix L-7) is incorrect.

Therefore, the following changes are made to the Draft EIR/EIS:

Page 4, Appendix L-7. The last paragraph is revised as follows:

> … The upper ends of estuaries usually have brackish, or low salinity water, but may be entirely freshwater during high runoff events, or hypersaline in the dry season (if runoff stops and tidal exchange is limited). ~~The biotic community in the brackish area may have a mixture of freshwater and estuarine plants and animals, but also have a few species adapted only to the brackish environment. In the Estero de San Antonio and Estero Americano, one such species that can live only in the brackish environment is the endangered tidewater goby.~~ The biotic community in the brackish area may have a mixture of freshwater and estuarine plants and animals, but also have a few species which characteristically occur only in the brackish environment. In the Estero de San Antonio and Estero Americano, one species characteristic of the brackish environment is the endangered tidewater goby, *Eucyclogobius newberryi*. This species succeeds in the brackish zone not because it is specifically adapted to low salinities, but because it can tolerate the wide range of salinities which occur in the brackish zone. *Eucyclogobius* tolerates salinities from fresh to 50 ppt (Moyle, et al., 1995), and can breed at salinities from fresh to normal seawater (Worcester and Lea, 1996).

Page 37, Appendix L-7. The following citation is added in alphabetical order

> Moyle, P. B., Yoshiyama, R. M., Williams, J. E., and E. D. Wikramanayake. 1995. Tidewater Goby *Eucyclogobius newberryi* (Girard), p. 235-239, In: Fish Species of Special Concern in California, 2nd ed. Cal. Dept. of Fish and Game. 272 p.

Page 38, Appendix L-7. The following citation is added in alphabetical order:

> Worcester, K. R., and R. N. Lea. 1996. Observations on tidewater goby habitat utilization and laboratory maintenance during the California drought (Abstract). In: Swift, C. Tidewater goby Symposium, So. Cal. Acad. Sci., Annual Meeting, Loyola Marymount University, May 3, 1996.

Response to Comment 92-238

Comment Summary: The comment states that "the Draft EIR/EIS is inadequate in claiming that the main effect of any project storage reservoir is to intercept flow. Other reservoir impacts" have been identified. The comment also states that effective mitigation for water quality impacts of storage reservoir is not identified.

The statement on page 5 of Appendix L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS that the main effect of storage reservoirs is to intercept flow was written from the perspective of downstream impacts on aquatic habitat. The authors of the Draft EIR/EIS agree that the statement is ambiguous and can be interpreted to be inconsistent with other elements of the Draft EIR/EIS.

The following change is made to the Draft EIR/EIS:

Page 5, Appendix L-7. The first sentence of the fourth paragraph is revised as follows:

> In the wet season, ~~the main effect of any~~ any Project storage reservoir ~~is to will~~ will intercept flow~~, so~~ thus decreasing flow ~~will be decreased~~ below the dam.

Mitigation for water quality impacts of storage reservoirs is included in the Draft EIR/EIS as Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen on page 2-125.

Response to Comment 92-239

Comment Summary: The comment states that "the Draft EIR/EIS is inadequate in asserting that summer flows are generally much more critical to aquatic life than are the wet season flows" and that historic salmon migrations in West County watershed should be taken into account.

The potential Project impact on anadromous fish is considered in the Draft EIR/EIS (refer to evaluation criteria 5 and 7 in Table 4.9-3 on page 4.9-37). The authors of the Draft EIR/EIS agree that the statement about the relative importance of summer and winter flows is ambiguous and can be interpreted to be inconsistent with other elements of the Draft EIR/EIS.

Therefore, the following changes are made to the Draft EIR/EIS:

Page 6, Appendix L-7. The first paragraph is revised as follows:

> Streams in the Project area are marginally perennial or are seasonal. Therefore, ~~S~~summer flows in ~~P~~Project area streams are considered to be ~~generally much more~~ critical to aquatic life ~~than are the wet season flows~~. A flow of 0.1 cfs during the dry season may mean the difference…

Response to Comment 92-240

Comment Summary: The comment states that "the Draft EIR/EIS is inadequate in failing to consider the need for a stream bed alteration permit from the California Department of Fish and Game in constructing project elements, such as stream bed crossings for pipelines".

The need for Department of Fish and Game Streambed Alteration Agreement is identified as a Project requirement in Table 3.6-1 on page 3.6-3 of the Draft EIR/EIS.

Response to Comment 92-241

Comment Summary: The comment states that "the Draft EIR/EIS is inadequate in that it erroneously states that no impacts would be expected to result from the proposed dams acting as barriers to movements of migratory fish for the Huntley, Two Rock, Bloomfield, or Valley Ford sites". The comment mentions, but does not cite anecdotal evidence of anadromous fish use at these sites.

The EIR/EIS authors do not agree with the assertion that the migratory corridor criterion (criterion number 7 in Table 4.9-3 on page 4.9-37) has not been properly applied to Huntley, Two Rock, Bloomfield and Valley Ford sites. The EIR/EIS authors are aware of evidence of anadromous fish use for the Two Rock site only. While historic use of other sites is plausible, no evidence exists that migration currently occurs. Other factors, such as dams and degraded water quality and habitat conditions have prevented migration to the Huntley, Two Rock, Bloomfield and Valley Ford sites for many years. The migratory corridor criterion applies to active migration corridors, and therefore, the criterion has been appropriately applied to the Huntley, Two Rock, Bloomfield and Valley Ford sites.

Response to Comment 92-242

Comment Summary: The comment states that the Draft EIR/EIS incorrectly concludes that the Carroll Road reservoir site is the only reservoir site at which a significant loss of spawning habitat would occur.

The Draft EIR/EIS does not conclude that the Carroll Road reservoir site is the only reservoir site at which a significant loss of spawning habitat will occur. Aquatic habitat types (including potential for spawning) for which losses are evaluated for significance are defined on page 2 in Appendix L-4 (Aquatic Habitat Survey Results) of the Draft EIR/EIS.

Response to Comment 92-243

Comment Summary: The comment states that "the Draft EIR/EIS is inadequate in claiming that only in cases where runoff causes the reservoir to fill beyond its capacity would impacts to aquatic habitats result from increased stream flows." The comment further states that the anticipated rate and frequency of overtopping of the spillway should be discussed.

The frequency of spill from reservoirs has not been quantified, but is qualitatively estimated in Appendices D-16 (Reservoir Spillway Hydrology Analysis) and D-17 (Reservoir Stormwater Runoff Diversion Structures) of the Draft EIR/EIS to be very unlikely. The reservoirs are designed not to spill under any foreseeable weather conditions. Reservoirs have substantial freeboard (the area above the normal maximum water surface elevation and the top of the dam) that will accommodate runoff from unusual rainfall events. In addition, as described in the Project description, the reservoirs will be operated so that they will only be full in the middle of May at the beginning of the discharge season. During the rainy season, when large storm events occur, the reservoir will be well below its storage capacity, and will not be in danger of being overtopped by rainfall runoff. Weather data do not indicate that there is a quantifiable likelihood of a major storm event in mid-May that will result in a reservoir spill. Spills are not expected to happen under any anticipated normal operating conditions.

Response to Comment 92-244

Comment Summary: The comment states that Appendix L-7 page 12 states that reservoir seepage could partially offset the downstream flow reduction caused by the dams. The comment also states that "elsewhere in the Draft EIR/EIS, it is claimed that reservoir seepage would be recaptured and pumped back" to the reservoir. The comment states that these statements are conflicting.

As described on page 12 in Appendix L-7 (Aquatic Biological Resources Impacts Analysis Report) of the Draft EIR/EIS, information about the effects of storage alone, irrigation alone, and the combination of storage and irrigation on stream flow is provided. The significance of impacts on streamflow is also evaluated under each of these three conditions. Recapture of seepage is identified as the approach to avoid downstream water quality impacts of storage in Mitigation Measure 2.5.3: Control Program for Hydrogen Sulfide, Ammonia, and Dissolved Oxygen, on page 2-125 of the Draft EIR/EIS. The evaluation of Project impacts on streamflow exclusive of mitigation impacts is appropriate.

Mitigation Measure 2.5.3 will affect stream flows downstream of the dam, and this impact was not described as an impact of Mitigation Measure 2.5.3, nor was it identified in Appendix L-7 of the Draft EIR/EIS.

The following changes are made to the Draft EIR/EIS:

Page 12, Appendix L-7. The second paragraph is revised as follows:

> Post-construction, wet season flow downstream of the dams would be supplied by lateral tributaries and groundwater discharge, but peak and average flows would be somewhat reduced relative to pre-construction flows. During the dry season, storage reservoirs would intercept base flows, but reservoir seepage could partially offset the downstream flow reduction caused by the dams. However, seepage has been identified as the cause of an adverse water quality impact (see Merritt Smith Consulting 1996b), and capture and return of the seepage to the reservoir is identified as mitigation. If such mitigation is implemented, reservoir seepage would not offset the downstream flow reduction caused by the dams. Any reclaimed water quality-related impacts to aquatic life caused by dam leakage are addressed in Parsons ES (1996).

Page 13, Appendix L-7. The following paragraphs and table are added before the Esteros section:

> The flow estimates in Appendices A and B do not reflect the effect of the reservoir water quality mitigation. Interception of the seepage to avoid a water quality impact would reduce the estimated flows in Appendices A and B by an amount equivalent to the estimated seepage rate, which is as follows (from Parsons ES 1996b):

Reservoir	Estimated Seepage Rate (cfs)
Valley Ford	0.038
Carroll Road	0.052
Bloomfield	0.079
Huntley	0.019
Two Rock	0.010

> Interception of the seepage would not alter any of the findings of significance in Tables 3 or 4, except those at Site A1. A significant dry season flow increase was identified at Site A1 (see first row of Table 3), but interception of seepage would eliminate this beneficial impact.

Page 18, Appendix L-7, The following paragraph is added after first complete paragraph.

> The flow estimates in Appendix C do not reflect the effect the reservoir water quality mitigation that would need to be implemented at Tolay and Sears Point. (Such mitigation is not needed at the Adobe or Lakeville sites). Interception of the seepage to avoid a water quality impact would reduce the estimated flows in Appendix C by an amount equivalent to the estimated seepage rate for the Tolay and Sears Point dams, which is 0.004 and 0.003 cfs, respectively (from Parsons

ES 1996b). This is a small impact and would not result in additional significant impacts on flow.

Page 37, Appendix L-7. The following citation is added in alphabetical order.

Parsons ES. 1996b. *Dam Seepage Evaluation, Santa Rosa Subregional Long-Term Wastewater Project*. Memorandum from Fred Kintzer to Dave Smith. January 17, 1996.

Page 4.6-83. The following sentences are added to the end of the Mitigation section of Impact 6.5.1.

Interception of seepage would slightly increase the magnitude of the flow reduction that would be caused by the dam. Flow impacts on aquatic habitat are considered in Section 4.9.

Page 4.9-67. The following sentence is added to the end of the Mitigation section of Impact 9.5.5.

Interception of seepage per Mitigation Measure 2.5.3 would slightly increase the magnitude of the flow reduction that would be caused by the dam, but would not create additional significant impacts.

Response to Comment 92-245

Comment Summary: The comment states that "the Draft EIR/EIS is inadequate in that it asserts that increases of up to 2.5 parts per thousand (ppt) in salinity in the upper reach of the esteros during summer would result from all of the West County project components". The comment further states that since no mitigation can prevent this impact from occurring and any change in water quality in the Marine Sanctuary is significant, all Alternative 3 options should be dropped from further consideration in the Final EIR/EIS as infeasible.

Refer to Response to Comment 5-9.

Response to Comments 92-246 and 92-247

Comment Summary: The comment consists of a newspaper article from The Press Democrat entitled "SR part of House rewrite of water law" by Tim Tesconi. The article is part of "Attachment I" referred to in Comment 92-27.

The article is submitted in support of Comment 92-27. Refer to Response to Comment 92-27.

Response to Comment 92-248

Comment Summary: The comment consists of a copy of the text of the Riggs Amendment No. 48 - Title VIII, H.R. 961 and accompanying explanation of the amendment. This comment is part of "Attachment I" referred to in Comment 92-27.

The attachment is submitted in support of Comment 92-27. Refer to Response to Comment 92-27.

Response to Comment 92-249

Comment Summary: The comment consists of an article from the Sonoma County Independent entitled "Riggs Water Plan Riles Critics." The article is part of "Attachment I" referred to in Comment 92-27.

The article is submitted in support of Comment 92-27. Refer to Response to Comment 92-27.

Response to Comment 92-250

Comment Summary: The comment consists of an editorial from The Press Democrat entitled "Clean water politics," dated May 21, 1995. The article is part of "Attachment I" referred to in Comment 92-27.

The editorial is submitted in support of Comment 92-27. Refer to Response to Comment 92-27.

Response to Comment 92-251

Comment Summary: The comment consists of an article from the Marin Independent Journal entitled "House GOP overhauls Clean Water Act," dated to May 17, 1995. The article is part of "Attachment I" referred to in Comment 92-27.

The article is submitted in support of Comment 92-27. Refer to Response to Comment 92-27.

Response to Comment 92-252

Comment Summary: The comment consists of an article in The Press Democrat describing public hearing to be held on Endangered Species Act proposed listing of steelhead, dated October 5, 1996. The article is identified as "Attachment J" in letter 92.

The article is submitted in support of Comment 92-201. Refer to Response to Comment 92-201.