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February 21, 2011

City of Ventura
Attn: Karen Waln
Environmental and Water Resources Division
501 Poli Street
P.O. Box 99
Ventura, CA 93002-0099
Email: kwaln@ci.ventura.ca.us

VIA EMAIL

Re: Ventura Coastkeeper's Comments on the City of Ventura's Estuary Subwatershed Study - Draft Synthesis Report

Dear Mrs. Waln:

On behalf of the Wishtoyo Foundation's Ventura Coastkeeper Program ("VCK") and our 700 plus members who desire an ecologically healthy Santa Clara River Estuary, we appreciate the opportunity to submit comments on the City of Ventura's Estuary Subwatershed Study - Draft Synthesis Report ("Draft Report"). Because the stakeholders were given only seven business days to comment on the Draft Report, VCK anticipates having additional comments after the Subwatershed Study/Synthesis Report ("Final Report") is submitted to the Regional Board on March 6th and after the stakeholders are provided with the Draft/Final Report's underlying data that is included in the appendixes not yet available to the stakeholders.

I. Habitat Availability and Suitability Analysis

- a. **Re-colonization of edge habitat and inundated vegetation habitat:** For the Ventura Water Reclamation Facility (VWRF) discharge alternatives that analyze the habitat availability and suitability of the Santa Clara River Estuary ("SCRE") for the study's focal species, including Southern California Steelhead and Tidewater Goby, why does the habitat suitability analysis and habitat availability curves for these focal species under these different discharge regimes not factor in or not consider re-colonization of edge habitat and inundated vegetation habitat? Should the habitat analysis



and availability curves utilize, for instance, a vegetation evolution model? As is, the habitat availability curves and habitat availability/suitability analysis for VWRP discharge alternatives that result in a decrease or no VWRP discharge into the SCRE only consider the initial SCRE inundated vegetation habitat and edge habitat that would be lost with a decrease in VWRP discharge, and do not consider the re-colonization of SCRE inundated vegetation habitat and edge habitat would occur upon a reduction of or absence of a VWRP discharge.

- b. **Factoring in restoration potential for open water habitat, inundated vegetation habitat, and edge habitat:** Under all discharge alternatives, the Draft Report's habitat analysis and habitat availability curves for the Focal Species do not consider or discuss the potential for SCRE restoration or expansion projects to increase open water habitat, inundated vegetation habitat, or edge habitat these habitats by: creating more structural complexity, inundated vegetation, deeper open water pockets, additional side channels/backwater habitat, and additional native edge habitat/overhanging vegetation. For instance, what would the effect on open water habitat, edge habitat, or inundated vegetation habitat for Southern California Steelhead or Tide Water Goby be in scenarios where the VWRP discharge was reduced or phased out to zero discharge if State Parks relocated their McGrath Campground and conducted an SCRE restoration project in its place, or for instance, if a SCRE restoration project was conducted on the north side of the Estuary? In analyzing the future available habitat under different discharge scenarios for the Southern California Steelhead, Tidewater Goby, Western Snowy Plover, and California Least Tern ("Focal Species"), VCK feels that it would be appropriate to also factor in SCRE habitat restoration potential/projects that would give stakeholders an idea of potential SCRE habitat suitability under different discharge scenarios.
- c. **Comprehensiveness of Habitat Availability/Suitability Analysis:** To be sufficiently comprehensive it appears that the Focal Species' habitat availability/suitability analysis should also analyze the effect of the VWRP discharge on: 1.) food sources for steelhead and tidewater goby, such as macroinvertebrates, and 2.) allowing the SCRE to support non native species that prey on, and compete with, steelhead smolt and tidewater goby. In addition, VCK objects to not including water quality as a component of the habitat area and availability analysis. Without adequate water quality, the Focal Species do not have adequate habitat for survival and are in jeopardy.

- II. **Macroinvertebrate Analysis:** The Draft Report does not analyze the importance of macroinvertebrates as a critical food source for Southern California Steelhead smolt, and does not analyze the effect of the VWRP



discharge on the SCRE's macroinvertebrate populations under the 6 different discharge scenarios, including a no discharge scenario. Why?

- III. **Competition and Predation from Non Native Species:** The Draft Report does not analyze the effect of predation and competition from the SCRE's non native species on steelhead, tidewater goby, and the other focal species. The Draft Report also does not analyze the effect of the VWRF discharge on the SCRE's non native species under the 6 different discharge scenarios, and the corresponding effect or benefit for the Focal Species. Why?
- IV. **Hydrological Model:** For purposes of evaluation, it would be useful if the Draft/Final Report contained/s the data imputed (such as SCRE berm substrate porosity, hydrological conductivity, ect.) into the hydrological model used to:
- evaluate how high and low tides influence SCRE stage and SCRE depth in absence of a discharge and under different discharge alternatives
 - how quickly tidal influence would fill the estuary to a stage of approximately eight feet in absence of a discharge
 - and how low and high tides contribute to changes in estuary stage in between tides

This information along with answers to these questions, would be useful for evaluation of habitat suitability for various focal species under different discharge alternatives. Please provide this information in the Final Report.

- V. **Estuary Depth, Stage, and Habitat Maps:** At each estuary stage level, it would be useful to include an analysis showing different water depths in different parts of the estuary and the different habitat features available for focal species at different water depths. In addition, incorporating a habitat re-vegetation model in analyzing habitat at different SCRE stages would be useful for analyzing habitat availability/suitability for the Focal Species under the six different discharge scenarios.

- VI. **Salinity**
- The Draft/Final Report should examine the SCRE's naturally occurring salinity levels in absence of the VWRF discharge.
 - The Draft/Final Report should examine the effect of the discharge on the SCRE's salinity. Under the six discharge scenarios, the Draft/Final Report should explain whether, to what extent, and where spatially, the VWRF discharge causes SCRE salinity fluctuations and / or a deviation from the



natural salinity of the SCRE, and whether these salinity fluctuations or deviations from the SCRE's natural salinity adversely affect the Focal Species, their habitat, or their food sources, such as macroinvertebrates in the SCRE.

- c. For alternative 6 (no VWRP discharge) the report should discuss the salinity benefits or impacts of no VWRP discharge to the SCRE and its native species, including the southern California Steelhead.

VII. Alternatives Analysis: The alternatives analysis should also analyze the impact of the VWRP discharge outside of June -September, and during the wet season, when the discharge can still contribute greatly to habitat conditions in the estuary for steelhead smolt, residing adult steelhead, and other species during closed mouth/lagoon conditions. After breach events, the SCRE receives a large percentage of flow from the VWRP during all seasons.

VIII. Bed Substrate: The Draft Report should analyze the effects of the VWRP discharge on the SCRE's bed substrate, especially around the berm, and the potential for the discharge to scour sand into the SCRE.

IX. DO / Emerging Contaminants / Metals

- a. The Draft/Final Report should analyze and describe the actual and potential sub-lethal effects of low, high, and fluctuating Dissolved Oxygen ("DO") levels on steelhead smolt and adults, and tidewater goby. The Final Report should discuss how long steelhead smolt and adults can be exposed to the DO levels found in the Draft/Final Report without suffering acute or sub-lethal impacts. In addition to providing single recordings of low or high DO levels, the Draft/Final Report should also provide stakeholders with amount of time or the duration in which the DO levels were below 7.0 mg/l and above 10 mg/l during the Estuary Special Studies period.
- b. The Draft/Final Report should analyze the sub-lethal effects of metals and emerging contaminants on the SCRE's Southern California Steelhead smolt and adults, and on other native aquatic species.
- c. The Draft/Final Report should provide the monitoring results for all monitored constituents by date of sample, in both the SCRE and the VWRP's effluent transfer station as reported monthly by Ventura to the Regional Board. Concentration of constituents such as copper in these discharge reports have been documented by researchers to have sub-lethal impacts on juvenile salmonid.
- d. The Draft/Final Report should consider these reports (also attached) to analyze the sub-lethal impacts of the metals contained in, and the



emerging contaminants more than likely contained in, the VWRF's discharge on Southern California Steelhead: 1.) NOAA Technical Memorandum NMFSC-83, An Overview of Sensory Effects on Juvenile Salmonids Exposed to Dissolved Copper: Applying a Benchmark Concentration Approach to Evaluate Sublethal Neurobehavioral Toxicity, October 2007; 2.) Lower Columbia River and Estuary Partnership. 2007. Lower Columbia River and Estuary Ecosystem Monitoring: Water Quality and Salmon Sampling Report.

- X. **Toxicity analysis:** Do the species utilized and referenced in the Draft/Final Report for toxicity analysis adequately represent the sensitivity of the SCRE's steelhead smolt and tidewater goby to the WRF discharge and any water quality conditions in the SCRE? The Draft Report is not clear as to whether the referenced toxicity analysis were performed both in the estuary and at the VWRF outfall. Please include all VWRF outfall or effluent transfer station toxicity analysis so stakeholders can analyze the toxicity of the VWRF discharge based on the data Ventura has available.
- XI. For Alternative 6 (no discharge alternative) and for the other alternatives with discharge reductions, the Draft/Final Report should analyze the ability of ocean inputs / tidal inputs to dilute concentrations of nutrients and other contaminants present in groundwater, surface water inputs, and VWRF discharges into the SCRE. This analysis will allow stakeholders to analyze the water quality and habitat benefits for the aquatic focal species in a reduced or zero discharge scenario.

XII. Southern California Steelhead Habitat:

- a. The Draft/Final Report should discuss food source for steelhead smolt food residing in the SCRE.
- b. **Lagoon Habitat:** The Draft Report's discussion seemingly minimizes the importance of SCRE lagoon habitat to steelhead smolt rearing and survival, by merely stating that: "Lagoon systems, therefore, can provide a potential demographic boost in two ways... First, lagoons may relax to some degree the density dependent bottleneck occurring in stream habitat." To make this assertion in the Final Report, please provide a citation to a study that shows steelhead smolt tend to only migrate to estuary lagoon habitat when streams are over crowded.

"Steelhead Growth in a Small Central California Watershed: Upstream and Estuarine Rearing Patterns", by Sean A. Hayes, et. al, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, (2008) (see attached) suggests the existence of three juvenile life history pathways: upper-watershed rearing, estuary-lagoon rearing, and



combined upper watershed and estuary–lagoon rearing, and does not indicate that steelhead smolt access Estuary lagoon habitat only when habitat bottleneck conditions exist upstream. This study also suggests that some steelhead smolt exhibit survival strategies that include downstream migration before age two to take advantage of lagoon growth opportunities. Further, this study constructs a growth model showing size at age for each freshwater life history pathway observed. The study shows that for the Scott Creek watershed:

“the majority of fish reaching typical steelhead ocean entry sizes (150–250 mm FL; age 0.8–3.0) were estuary–lagoon reared, which indicates a disproportionate contribution of this habitat type to survival of Scott Creek steelhead. In contrast, steelhead from higher latitudes rear in tributaries during summer, taking several years to attain ocean entry size.”¹

XIII. **Appendixes:** Please provide all the underlying data for Tables 5-4 through Table 5-10 of the Draft Estuary Synthesis Report in the Final Report’s Appendixes. VCK would like to analyze the underlying data from these tables that shows the concentrations or levels of the different constituents present in the SCRE and the VWRP discharge from each sampling event from 1997 to 2010.

XIV. **Enhancement Definition and Study Usage:**

- a. Where does the Draft Report produce its definition of “enhancement”, and on what scientific basis can the Draft Report or Final Report conclude that that VWRP has historically provided an enhancement to the SCRE and its native species, including to steelhead smolt and adults? The first sentence, first full paragraph - page 4 of the Draft Report states: “The primary purpose of this Estuary Subwatershed Study (Study) is to confirm that VWRP effluent discharge to the SCRE provides an enhancement of existing beneficial uses as compared to the absence of discharge”. According to the VWRP’s own discharge and SCRE monitoring reports, current and past discharges from the VWRP (which constitute an anthropogenic input of water of a different chemistry than natural/historic inputs) have displayed levels of nutrients (causing eutrophic conditions documented in this Draft/Final Report) and metals that have according to scientific literature, have imparted acute, chronic, and sub-lethal toxicity threats to Southern California Steelhead.

¹ “Steelhead Growth in a Small Central California Watershed: Upstream and Estuarine Rearing Patterns”, by Sean A. Hayes, et. al, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, (2008).

- b. Furthermore, because the Estuary Subwatershed Study was shaped to or designed to “confirm that VWRP effluent discharge to the SCRE provides an enhancement of existing beneficial uses as compared to the absence of discharge”, VCK is concerned that the Draft and Final Report was not focused on the critical questions and research questions government stakeholders charged with protecting the ecological integrity and endangered species in the SCRE (such as the Southern California Steelhead and Tidewater Goby) need to determine the ecological impacts of the VWRP discharge on the SCRE and its populations of Southern California Steelhead and Tidewater Goby under the VWRP’s current discharge regime and discharge regime under the six different discharge scenarios.

Thank you for considering our comments. Please feel free to contact us with any questions.

Sincerely,



Jason Weiner, M.E.M.
Associate Director & Staff Attorney
Ventura Coastkeeper