



May 5, 2016

Subject: Comments on San Juan Creek (South Orange County) WQIP Section B.2

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Dear Ms. Ryan:

Thank you for the opportunity to provide comments on the draft Section B.2 of the South Orange County WQIP. Laguna Ocean Foundation is the grantee for a project supported by the California Coastal Conservancy and others to develop a restoration plan for the Aliso Creek Estuary. We are a non-profit organization whose mission focuses on protection of coastal resources of the Laguna Coast in Orange County, California. Our mission originates from Laguna Vision 2020, a stakeholder-driven consensus process for the City of Laguna Beach, and is supported by a broad base of constituents including residents, businesses, non-government organizations and government agencies (such as the Bureau of Land Management through its management of the California Coastal National Monument).

General Comments

The fundamental concepts presented in the draft of Section B.2 provide a solid framework for development of Priority Water Quality Conditions and Highest Priority Water Quality Conditions. The comments and suggested text edits presented below are offered in the spirit of enhancing the current draft of Section B.2 and guiding the development of Provisions B3 and B4.

Specific Comments on Text

[Suggested edits are indicated as ~~strikeouts~~ for deletions and **bold text** for additions.]

Section 1.1 Purpose and Scope, Second paragraph, final sentence.

We would suggest the following edits:

‘A more holistic watershed-scale approach also facilitates a stronger relationship between this Plan and various ongoing **and future** integrated water management efforts, recognizing that efforts to effectively management water resources in the region **are ought to be** highly interrelated.’

Figure 1: Overview of Adaptive Assessment and Management Process. This graphic nicely illustrates the conceptual adaptive management process. However, it lacks any indication that management is goal-oriented, *i.e.*, working toward a set of desired conditions (outcomes to be defined in subsequent chapters of the WQIP) rather than merely asking if conditions are improving or getting worse, as indicated in the graphic. Figure 1 needs to indicate the most important step in the adaptive management process – modification and/or enhancement of ongoing management actions in adaptive response to the findings of monitoring and assessment.

Section 1.2.2 Riparian Resource Context – Urban Stream Syndrome. This Resource Context provides an excellent framework for defining priorities and goals.

Section 2 PRIORITY WATER QUALITY CONDITIONS

Second Paragraph, penultimate sentence. Beneficial uses are much more likely to be achieved when watersheds and receiving waters exhibit “normal form and function.”

Understanding “normal form and function” may necessitate focused research for some categories of receiving waters (e.g., perennial streams, estuaries, MPA protected waters). Equally important – and a major consideration for this WQIP – is the need to recognize that some research is likely necessary to understand the “normal form and function” of entire sub-watersheds within the San Juan Hydrologic Unit, and how best to manage MS4-related sources and impacts at the watershed-scale to address sensitive resources. It is also important to recognize that historical flow data that pre-dates the large-scale changes to South Orange County’s watersheds that occurred with urbanization is essential to the WQIP. There is strong evidence that hydrologic flow (and its consequent impacts on watershed processes, geomorphology and water quality) altered dramatically between the 1960’s and 1980’s. Without a sufficiently long-term historical data set reaching back to pre-1970’s conditions, the WQIP cannot identify the “normal form and function” of sub-watersheds and “known historical versus current physical, chemical, and biological water quality conditions” as called for in Section B.2(a)(5) of the permit.

Section 2.1.1 and 2.1.2, Data Sources and Evaluation Approach. Beginning with these two sections the WQIP seems to take a different turn and revert to a conventional TMDL driven, constituent-based approach, despite the precepts in the preceding sections that very carefully articulate an approach consistent with the one emphasized in the amended Permit. The steps related to data compilation, data evaluation and the application of data

to defining priorities risk being greatly hampered by the WQIP's over-reliance on conventional data derived under the regime of previous MS4 cycles when prescriptive, activity-based requirements were the goal. This shortcoming reflects an obvious and acute data gap in the domains necessary to support watershed-scale management with concerted management efforts designed to target specifically identified sensitive resources (rather than TMDLs). The WQIP would be well served to acknowledge the need for a broader data set designed to address the needs of watershed-scale management with performance metrics focused on “**system value and function**” as established by the Plan. Without a clear identification of data needs specific to the new functional and system-based approach of the Permit, the WQIP is unlikely to achieve its most fundamental goals.

Section 2.1.3 Data Evaluation. The data sources identified in the text and in Figures A-9 and A-10 (*Physical Habitat-Related Biological Issues* and *Water Quality-Related Issues*, respectively), along with the need noted above for supplemental categories of data to meet WQIP goals, are appropriate subjects for a Data Needs Assessment or Data Gap Analysis performed in the early stages of WQIP development and implementation. Provision B2 and the transitional text to B3 is the appropriate point in the WQIP to identify the need for a Data Gap Analysis.

Table 1: Non-Priority Water Quality Conditions. ‘Under Category of Non-Priority Conditions’, it should be made clear that use of the word “impairments” is in the broader sense used earlier in the text, referring to “biological impairment”, not just impairment in the “303(d)” sense of the term (page 1-3, Section 1.2.2.).

Section 2.2.2. Priority Water Quality Conditions. The “receiving water conditions” referred to in the first sentence should explicitly carry forward the full range of conditions (in addition to those related to constituents) stated in the definition in the first paragraph of Section 2 (page 2-1):

The Orange County Stormwater Program defines “water quality conditions” to include a range of related MS4-related factors that influence the status of beneficial uses of receiving waters. In addition to constituents in MS4 discharges, such factors can also include hydromodifications, channel and habitat modification, composition and state of aquatic biota changes to water balance, and others. [emphasis added]

Table 2: Priority Water Quality Conditions. The conditions/priorities identified for the categories of “physical conditions related to biology” and “water quality conditions related to biology” do not effectively address the relevant water quality conditions as defined on page 2-1. Physical effects of hydrologic loading, for example, go well beyond erosion impacts (flow volume, rate and seasonality all fundamentally influence natural ecosystem functions). Water quality effects on natural systems extend beyond effects of toxicity and pesticides (they can include temperature, salinity and other non-toxic chemical parameters that relate to tolerance levels of native aquatic organisms). The “Conditions/Parameters” preliminarily identified in this draft table suggest the need for

special expertise in the area of ecosystem functions to assist in developing this section of the WQIP (and related subsections developed in Provision B3), and in the associated task of defining a research agenda to address data gaps and develop the management oriented science necessary to operationally define water quality conditions and parameters to achieve WQIP goals, other than those conditions that are readily defined in terms of constituents.

Section 2.2.3 Methodology for Selecting Highest Priority Water Quality Conditions. The factors to be considered in selecting HPWQCs (bullet points, page 2-10) are well-chosen strategic considerations that provide a decision framework that is elevated in purpose relative to the more basic considerations for selecting Priority Water Quality Conditions. But this methodology needs to integrate the information provided in compliance with Section B2(a)3 of the Permit which calls for identification of “Receiving waters recognized as sensitive or highly valued by the Copermitttees . . . including marine protected areas. . .”. Thus, the list of factors to be considered should include:

▪ **Relationship to Sensitive Resources and High Value Recreation Areas**

Without this essential link to Figures A-10 and A-13 in this step of the process, the information in these maps would not effectively be integrated into the WQIP. With the omission of these considerations rectified, the criteria for selecting HPWQCs is well-positioned to provide a rationale that strategically leads to an effective allocation of management resources.

Table 3, HPWQC FOR THE SAN JUAN HYDROLOGICAL UNIT. The HPWQCs identified in Table 3 have yet to be defined in terms of Geographic Extent (as noted in the table), but also need to be defined in terms of definitive goals (endpoints) that will serve as measures of success (the goal posts) for management. Incremental measures of success (monitoring for improvements over time) are valuable for adaptive management purposes, but are not meaningful unless clear endpoints are identified. Endpoints should address the Highest Priority Conditions identified in Table 3 and should be science-based, with early conceptual definitions serving the WQIP in its preliminary stage of development, later replaced by more rigorous, operational definitions developed as the accompanying scientific studies provide insights into key system processes and functions.

In the column labeled “Geographic Extent”, for all three categories (beaches, stream reaches wet & dry) the bullet points should make clear that ‘sensitive and highly valued receiving waters’ are among the key criteria for defining the geographic extent of each priority.

Section 2.3.1 Coastal Waters. The text states that ‘the assessment methodology described in Section 2.2.3.1 clearly shows that indicator bacteria are the predominant water quality issue along the coastal waters.’ However, this is a foregone conclusion and a tautology, inasmuch as the criteria and indices used in the assessment methodology of Section 2.2.3.1 **only** address indicator bacteria and do not consider or assess other

issues. The draft WQIP makes the error (also expressed orally by the County's consultant during the second public workshop) that coastal water systems are less complicated than inland waters. Coastal and marine systems are in fact much more complex than terrestrial systems, owing to the extreme temporal variability of a very large number of key parameters. The WQIP's oversimplified approach leads to a priority that has almost no relevance to the health of ecosystems in coastal waters or in fresh and brackish water ecosystems. (Nutrient loading, on the other hand, is an important priority for natural ecosystems.) This approach prioritizes indicators important to human health (which is important) but to the exclusion of water quality issues important to "sensitive and highly valued" receiving waters, which include the coastal waters of the MPA and ecosystems that are the subject of ongoing restoration efforts supported by Co-permittees – the Aliso Creek Estuary and the segment of Aliso Creek in Aliso & Wood Canyons Wilderness Park.

Section 2.4 Potential Strategies. The Potential Strategies listed aren't really strategies, but methods to achieve strategies. The WQIP states a set of broadly defined target issues in the HPWQCs, but Potential Strategies should identify an approach, or multi-pronged approach (not the toolbox), to watershed management devised to further define and address those priorities. For example:

- The WQIP will apply a holistic approach at the sub-watershed level to optimize the allocation of management resources of all co-permittees so that management efforts within each sub-watershed work concertedly toward achieving the Priority Goal.
- Management responsibilities of co-permittees within each sub-watershed will be allocated on a fair share basis (analogous to fair share cost allocation programs for mitigating traffic volume impacts at over-capacity intersections). Allocations shall be based on the co-permittees' contributions to discharge into the sub-watershed and will be applied strategically and at strategic locations in the sub-watershed to optimize management effects in terms of the endpoints (measurable goals) defined for the sub-watershed.
- Water Quality management should consider the entire water cycle and include management actions that deal with all stages of the cycle (water importation, use, reuse, runoff and discharge).
- Management strategies should anticipate potential future scenarios including significant changes in precipitation, availability of imported water, consumer use, economics, as well as changes in technologies for water treatment and reuse.
- Management strategies should not be restricted to addressing pollutants in isolation, but should be resource-based, considering water as a resource in terms of quantity as well as quality, and the natural ecosystems of receiving waters (Permit, section II.B.2.a(8), Assessment of Receiving Water Conditions).

- Management strategies should be integrative and comprehensive: integrative by embracing all steps of the water cycle; comprehensive in that they are designed to address entire watersheds and/or sub-watersheds. They should be developed with consideration of parallel and overlapping goals of other adopted regional programs for managing public natural resources, such as the Natural Communities Conservation Program (NCCP) and Marine Life Protection Act (MLPA) to create deliberate synergy among resource management efforts at the watershed level.
- The overarching water quality management objective of the NPDES Permit (to limit discharge to waters of the U.S. to 'only rain in the drain') coincides with emerging goals of local water providers to maximize capture and re-use of imported water within South Orange County. Management strategies should include collaborative efforts with local water providers and waste water treatment providers to assist in optimizing water management within each sub-watershed.

General Recommendations for Subsequent Sections and Revisions

- The shift to an emphasis on measureable resource-based performance standards triggers a need for new monitoring and measurement tools and the necessary science to support them. This, in turn, underscores the need to identify data gaps and scientific research to support management goals. The WQIP should identify implementing strategies that include interim goals and phased implementation, along with a focused research agenda to facilitate an adaptive management approach throughout the permit cycle.
- Critical data gaps not likely to be filled immediately (but which should be addressed through a research program initiated with the WQIP and pursued through partnerships with appropriate parties) include (1) linkages between water quality effects and ecosystem processes in marine protected areas (intertidal and subtidal habitats); (2) water quality effects on ecosystem processes in highly valued habitats (e.g., future restored habitat of the Aliso Creek main stem in Aliso & Wood Canyons Regional Park; future restored habitat of the Aliso Creek Estuary; habitat preserves within NCCP designated areas); (3) the role of perennial streams (the largest components of watersheds in South Orange County) in sustaining ecosystem integrity and water quality in local watersheds. New tools needed to support management of these watershed systems include sensitivity analysis methodologies that yield meaningful performance standards for managers.

Thank you once again for this opportunity and for your consideration of these comments.

Sincerely yours,



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