

**South Orange County Water Quality Improvement Plan  
Consultation Panel Comments on Draft No.1 – B.3 Chapter**

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Section 2.1.4.3	Human Pathogen Source Control Strategy	Surfrider agrees with the use of Microbial Source Tracking upfront as an effective implementation planning tool which uses human marker sampling.	Rick Wilson  Surfrider Foundation
P. 2-12	Residential LID Retrofit/Absorbent Landscaping Incentive Program	Surfrider agrees that a key element of efforts to improve water quality is to “convert to drought tolerant and more absorbent landscaping.” This will have water quality benefits in both dry weather and wet weather. We note the following text on P. 2-38-39: “Based on the SEEP study, a reduction in dry weather flows of 40 percent was estimated as a result for areas that implementing irrigation controllers, improved irrigation systems, pervious edgescaping, and drought tolerant plants. In total, dry weather BMPs implemented to date in Aliso Creek and San Juan Creek were estimated address 57 percent and 58 percent of dry weather bacteria load in these watersheds, respectively, in part from dry weather runoff volume reduction.”	Rick Wilson  Surfrider Foundation
Section 2.2	Geomorphic Impacts	appropriately identifies stream segments for restoration/rehabilitation, but we are concerned that it is implied that this is an optional strategy (p. 2-30). We believe that this strategy is essential to making meaningful improvements to water quality, especially in wet weather. In addition, the prioritization of stream reaches for restoration based on ownership is practical, but may not make the most sense in terms of design and function. It might be useful to prioritize based on likely impact on overall watershed condition first, and then layer in the ownership considerations.	Rick Wilson  Surfrider Foundation
Section 2.3	Unnatural Water Balance/Flow Regime	This is a key component of the plan, and Surfrider Foundation agrees that emphasis on correcting an unnatural water balance and eliminating unnatural dry weather flows are keys to both improving water quality and improving other environmental conditions. However, there is no real consideration of unnatural patterns of wet weather discharge, beyond those mentioned in the geomorphic section.	Rick Wilson  Surfrider Foundation
Gen Comm 1	--	It is not clear how the WQIP will be used to address areas that have been impaired based on excessive nutrient concentrations. There appear to be no nutrient reduction strategies identified.	Rick Wilson  Surfrider Foundation
Gen Comm		There seems to be no clear link in the numeric goals to ecosystem functions. Will there be additional text and analysis added to address this point? At this	Rick Wilson  Surfrider

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2		point, there is no real or meaningful connection presented on how the strategies will affect biological communities and no mention of the ultimate effect on the estuaries.	Foundation
Gen Comm 3		In general, the tables that show projected progress toward meeting dry weather and wet weather pathogen health risk numeric goals seem unrealistically weighted toward progress in the 3rd and 4th permit terms, rather than steady progress toward the goals over time. In addition, on page 2-6 it is stated “Wet weather load reductions will be achieved primarily through implementation of non-structural BMPs, where non-structural strategies targeting sources of human pathogens and FIB will be prioritized for early implementation.” Although the percentage reductions admittedly can vary considerably by HSA, it seems implausible that these load reductions can be achieved with only programmatic and other non-structural BMPs. Table 4 identifies these non-structural BMPs as 1) JRMP Programs, 2) Redevelopment through LID Implementation and 3) Rooftop Disconnection Incentive Program. Perhaps a further break-out of the estimated effectiveness of specific BMPs in the JRMP, as well as the assumptions made in estimating the effectiveness of the redevelopment LID and rooftop disconnection programs would help clarify this.	Rick Wilson  Surfrider Foundation
P. 1-2		It is not clear how the “extent reasonably achievable” is defined or will be determined.	Rick Wilson  Surfrider Foundation
P. 2-1		We question the statement that anthropogenic bacteria can’t be distinguished from natural sources. The MST studies mentioned on p. 2-9, including the use of human markers and actual pathogen sampling, have proven useful in distinguishing between natural and human sources.	Rick Wilson  Surfrider Foundation
P. 2-12		The rate of redevelopment requiring LID implementation for each of these land uses was extrapolated based on the rate analysis done for the Ballona Creek Implementation Plan.” The relevance of this plan should be explained.	Rick Wilson  Surfrider Foundation
P. 2-29		It is very disconcerting that the “Chief’s Report” on Aliso Creek is not anticipated until April 2018. Any efforts by the Permittees and/or the San Diego Regional Water Quality Control Board would be	Rick Wilson  Surfrider

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		appreciated.	Foundation
P. 2-41,	Integration of Plan With Other Efforts	<p>Surfrider Foundation agrees with and appreciates the following statements:</p> <p>“...the plan for this HPWQC is built around a hierarchy of water conservation first, recycling of water second, and treatment and discharge third.”</p> <p>“It is expected that implementation of strategies will accrue benefits beyond those described in this Chapter, including reduction of pathogen sources and reduction of loads of PWQCs while also augmenting potential for reuse of water.”</p>	<p>Rick Wilson</p> <p>Surfrider Foundation</p>
P. 2-54		regarding the San Juan Creek in-stream water augmentation project, it may be appropriate for some Permittees to financially participate in and benefit (water quality and water supply benefits) from this project.	<p>Rick Wilson</p> <p>Surfrider Foundation</p>
Gen Comm 1		<p>The conceptual development of numeric goals and strategies was thorough and well-aligned with B.2 structural organization, but my concern is that this B.3 doc did not provide sufficient detail on planned non-structural and structural BMP and load-reduction implementation to adequately evaluate the effectiveness, feasibility or cost of the Plan. A summary table with associated maps (similar to the B.2 map series) would clarify the scope of work being proposed, and identify specific BMP location by watershed and BMP type, numeric goals at that site and timeline to achieve, projected cost, and cost-effectiveness index. Also, overlaying the geomorphic impacts (slide 25) and outfall prioritization (slide 37) targets onto these maps would present an integrated picture of objectives. The programmatic strategies listed on Slide 19 as well as the LID and Rooftop Disconnection approaches (Slide 20) build on existing strategies shown on the BMP base map (slide 21, map A-15 in B.2). This map illustrates the current state of BMP implementation for Laguna Coastal, Aliso Creek, Dana Point Coastal, San Juan Creek and San Clemente Coastal watershed management areas via catch basin retrofit, channel restoration, landscape retrofit, treatment system, water conservation, and diversions. The 2013 Watershed Work Plans provide valuable context for the WQIP, including higher resolution maps of BMPs and monitoring sites for each management area and appendices with narratives of key BMP projects, and cost analysis for major types of BMPs. One further</p>	<p>Sandra Jacobson</p> <p>California Trout</p>

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		note, the long term strategies (slide 22) also lacked detail by uniformly attributing ¼ to each type of BMP (wetlands, infiltration, biofiltration, media filtration) which is significantly different than existing state as shown in the Watershed Work Plan maps.	
Gen Comm 2		The target shown for Interim Numeric Goals for percent load reduction of Fecal Coliform component of FIB for TMDL Compliance during Wet Weather (slide 9/1 presentation, 2 <sup>nd</sup> column from right) is for 2028. This is consistent with what is shown in B.3 doc, Table 2, column 7. However, the more near-term targets projected by watershed management area for 2018 (1.6% - 6.5% reduction) and 2023 (3.2% - 13% reduction) are quite low. Are there ways to increase near-term reduction targets.	Sandra Jacobson  California Trout
Gen Comm 3		What is demonstrated cost-benefit and effectiveness in proposed shift from structural treatment to source containment for human pathogen control/FIB reduction (slide 18).	Sandra Jacobson  California Trout
Gen Comm 4		In prioritizing outfalls based on discharge/volume (B.3 Appendix H; slide 37), how does this correlate with concentration of Constituent of Interest? Is volume alone the best metric?	Sandra Jacobson  California Trout
Gen Comm 5		Can you provide more specific information on quantitative metrics, coordination of agency planning, and specific projects proposed for the geomorphic impacts HPWQO. Channel alteration projects as part of the WQIP will occur in the context of long-term capital projects in Orange County for in-stream channel work, including proposed SMWD Groundwater Recharge plan using inflatable rubber dams and recycled water injection; and Orange County Public Works grade stabilization and flood control plans. Channel alterations potentially generated by these large scale County-wide projects will impact the hydraulic and sediment transport properties that are now informing BMP planning for the geomorphic impacts HPWQO. Two further points, 1) how will groundwater recharge structures that are designed to pond water under certain conditions be reconciled with BMPs for the HPWQO that reduce unnatural water balance and flow regimes; 2) how to maximize efficiency of project review for in-stream alterations by state and federal agencies re: impact to biological resources.	Sandra Jacobson  California Trout

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Gen Comm 6		The ecosystem-wide benefits of minimizing adverse geomorphic impacts are significant, and can be implemented in multi-benefit projects with diverse funding sources. For example, a 65% engineering design for steelhead passage has been completed for the total fish passage barrier downstream of the Metrolink railroad crossing on Trabuco Creek. This design improves geomorphic properties of this stretch of river and provides habitat access to multiple species. The fish passage design plan remedies the current undesirable situation of a 22-ft concrete apron drop (aging flood control structure) emptying into a scour pool (standing water), with incised banks (sediment release) and flowing into an area of hydromodification at the Oso Creek confluence. Projects such as this provide biology/ecology benefits (top of the pyramid. B.3 Fig. 1) while improving Tier 2 geomorphology, and Tier 3 hydrology while utilizing cost share from new sources and generating useful technical data.	Sandra Jacobson  California Trout
Gen Comm 7		With the approach of implementing multiple programmatic strategies (slide 19), how will you determine which are the most impactful and cost-effective?	Sandra Jacobson  California Trout
Gen Comm 8		Will there be Investment in molecular diagnostics to screen for actual disease-causing organisms for the Pathogen Health Risk HPWQO, and effort to phase out FIB system?	Sandra Jacobson  California Trout
Gen Comm 9		Will LiDar resolution be sufficient to generate reliable data and track erosion at most areas of the SOC WQIP area, given limitations on elevation data in range of 1-3 feet; and that channels and areas of dense vegetation will be surveyed as part of the data set.	Sandra Jacobson  California Trout
Page 1-2 Figure 1		Page 1-2 Figure 1: More context is needed to understand why a stream restoration functional framework is being used for the water quality improvement plan. Although stream restoration is a primary function of the WQIP, more context (i.e. Regional Board focus on urban stream syndrome and focus on stream restoration as a nexus to overall watershed health) is needed so the reader understands why this function framework is the default for the entire WQIP.	Laura Eisenberg
Page		Page 1-2: What is meant by "normal form and function."? Is this in the context of an undisturbed	Laura Eisenberg

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1-2:		natural watershed or a developed watershed as these are two different things?	
Page 1-2		For the overarching goals identified here Goal 3: “Restore or maintain recreational and biological beneficial uses of inland receiving waters to the extent reasonably achievable.”, should this not included the downstream receiving waters of the ocean as well?	Laura Eisenberg
Page 1-3 – Table 1		For Condition: Channel Erosion/ Geomorphic Impacts one of the bullets under geographical extent is “where impacted”. This needs further definition as impacted has a broad definition. Does this mean impacted from upstream developed/urbanized drainage areas? Additionally, there should be a reference in geographical extent to those areas identified as exempt under the 2015 South Orange County Hydromodification Management Plan, which should be excluded from the geographical extent for this item. Additionally, there is no mention of sediment supply areas, is this considered under the “impacted” bullet? Also, what is the relevance of the bullet “Areas with highest intensity of recreational use/visibility”?	Laura Eisenberg
Page 1-3		For the condition Unnatural Water Balance/Flow Regime Reaches and outfalls demonstrated to be ponded or flowing in dry weather, this needs to be further defined. In some conditions there may be natural perennial flow within a reach which is acceptable to have flows in a dry weather condition, in some cases it could be due to anthropogenic dry weather flow, which is not acceptable.	Laura Eisenberg
Page 2-1: Section 2.1.1		Regarding the statement “Human pathogens primarily originate from anthropogenic sources and are a key source of impairment of recreational beneficial uses”, do not all human pathogens originate from anthropogenic sources?	Laura Eisenberg
Page 2-3:		The bullet point “No exceedance of the final effluent limitations in the receiving water or downstream of MS4 outfall” is not correct as effluent limitations are measured at MS4 outfall locations and not in the receiving water. There are additional compliance pathways identified in Attachment E [Section 6.b.(3)] of the permit which are not identified in this section including: a. There are no exceedances of the final effluent limitations under Specific Provision 6.b.(2)(b)(i) at the Responsible Copermittee’s MS4 outfalls b. The pollutant load reductions for discharges from the Responsible Copermittees’ MS4 outfalls are greater than or equal to the final effluent limitations under Specific Provision 6.b.(2)(b)(ii); c. The Responsible Copermittees can demonstrate	Laura Eisenberg

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		that exceedances of the final receiving water limitations under Specific Provision 6.b.(2)(a) in the receiving water are due to loads from natural sources, AND pollutant loads from the Copermittees' MS4s are not causing or contributing to the exceedances;	
Page 2-8: Section 2.1.4.1		Are the catch basin inserts (wet and dry) and the trash separation units (wet and dry) having a measured effect on the reduction of bacteria? The section identifies that "Quantifications of wet weather load reductions for implemented BMPs since 2001 are documented in Appendix I.", however no Appendix I was provided with the draft report.	Laura Eisenberg
Page 2-9:		What is the technical justification for the following statement "To account for the expected pollutant load reduction from these non-modeled, nonstructural BMPs, an additional ten percent reduction is included in the quantification."?	Laura Eisenberg
Page 2-12:		The section states "The rate of redevelopment requiring LID implementation for each of these land uses was extrapolated based on the rate analysis done for the Ballona Creek Implementation Plan." Are the Ballona Creek Watershed and South Orange County comparable for rates of redevelopment? Is there a better source that has been developed specifically for South Orange County that would be more accurate?	Laura Eisenberg
Page 2-13:		Disconnect of downspouts was estimated at 7.5-30% of all residences, 30% seems ambitious for this type of program. How was this estimate developed?	Laura Eisenberg
Page 2-13		Regional stormwater capture and use systems should be added to the list of BMPs.	Laura Eisenberg
Page 2-14:		What is the technical basis for this statement "The average sizing factor for BMP implementation was assumed to be half of the design capture volume, on average."	Laura Eisenberg
Page 2-15		Will the following statement be acceptable to the Regional Board "Within 3 years of the acceptance of this plan, specific structural BMP sites, types, and conceptual designs will be developed to address the deficiency in load reduction." As the assumption will be that the Regional Board will want to see specific locations as part of the plan and if monitoring identifies that the structural BMPs are not needed, then they will not be built.	Laura Eisenberg
Page 2-15:		Regional runoff capture and use systems should be added to the list of BMPs that will achieve full removal of dry weather flow.	Laura Eisenberg
Page 2-16		Is there an exhibit that identifies the drainage areas for the dry weather diversions per the statement "At least 40 flow diversion and dry weather treatment	Laura Eisenberg

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		projects have been implemented along the SOC coastline to reduce the effects of dry weather discharges.”	
Page 2-17		For the statement: “As such, it is reasonable that the strategies identified, combined with refinements or additions to this Plan as part the iterative approach, will result in achievement of the interim and final goals.” This statement should reference that based on the modeling of the proposed watershed control measures the plan will result in achievement of the interim and final goals.	Laura Eisenberg
Page 2-19		Need to elaborate on the statement “Where channel degradation has occurred, correcting hydrologic inputs is not adequate to restore stream form; even restoration to pre-development hydrologic conditions would not typically allow the stream to recover”. Need to identify why to provide more context (i.e. channel slope cannot usually be recovered and confinement of channels due to development in the flood plain restricts natural meandering of channels).	Laura Eisenberg
Page 2-19		“new development and redevelopment projects will implement the flow controls described in the Hydromodification Management Plan (2015).” The statement should also include “sediment management” which is also required in the South OC HMP. The South OC HMP also identifies stream restoration as a mitigation option for some projects which should be mentioned here as well.	Laura Eisenberg
Page 2-21		For the constraints and opportunities “As part of the development of this plan, these reaches were further evaluated for constraints and opportunities utilizing the following factors:” With right-of-way ownership and width of right-of-way additionally proximity of developed land could be considered for the potential for acquisition of right-of-way. Additionally, were existing stream buffers outside of the right-of-way considered?	Laura Eisenberg
Page 2-25		When will the lineal feet of stream reach to be restored be identified?	Laura Eisenberg
Page 2-26		Potential design elements of rehabilitation could also include removal of concrete/hardened infrastructure and replacement with reinforced vegetated bank infrastructure (i.e. ArmorFlex).	Laura Eisenberg
Page 2-29		Watershed Management Area Analysis Coarse Sediment Supply Analysis. Per permit section B.3.b.(4)(c) the Watershed Management Area Analysis will also identify areas within the Watershed Management Area where it is appropriate to allow Priority Development Projects to be exempt from the hydromodification management BMP performance requirements described in Provision E.3.c.(2),	Laura Eisenberg

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		including supporting rationale. Should this be mentioned in this section?	
Page 2-40		One of the strategies should be the inclusion of structural irrigation controls such as smart timers, soil moisture sensors etc. as well as incentive programs from the Permittees to encourage their implementation. Additionally, runoff capture and use systems should be specifically identified that can serve both a wet weather and dry weather function.	Laura Eisenberg
Page 2-41		Page 2-41 – In the statement “While restoring more natural flow regime is a foundational element of stream restoration, it is not always possible or desirable.” use the term “stream rehabilitation” to be consistent with the rest of the document.	Laura Eisenberg
Page 2-48		High-resolution imagery analysis: It seems the use of drones with video could also help to identify locations with spatial extent of open water, vegetation types that are dependent on water as well. Overtime the cost of drones will go down as well.	Laura Eisenberg
Page 2-51		Outfall capture feasibility studies should also consider exfiltrating storm drains from groundwater.	Laura Eisenberg
Page 2-52		New development/redevelopment program should, specifically mention the evaluation of smart irrigation controls and landscape irrigation needing reduced water (i.e. xeriscaping) as source control strategies that will be evaluated in updating the new development/redevelopment program requirements.	Laura Eisenberg
Page 2-56		For the statement “Permittees proposing in-stream restoration projects should consider these elements, as applicable and feasible.” use the term “in-stream rehabilitation projects” to be consistent with the rest of the document and to be clear about the goal of rehabilitating a stream and not restoring it to its natural condition.	Laura Eisenberg
Page 2-64	Goals	“Support South OC IRWM efforts to reduce water consumption and capture dry weather flows for water supply augmentation” The multiple benefit of reduction of potable demand should be highlighted here.	Laura Eisenberg
Gen Comm 1		Several appendices (for example D, E, G, I) were not provided and therefore the conclusions made in the main Draft Plan, such as expected wet weather load reductions, were difficult to assess. Information regarding the watershed model used, input data used, coefficients used, and assumptions made need to be provided.	Erica Ryan SDRWQCB
Gen Comm 2		Are the Copermittees planning on completing the optional Watershed Management Area Analysis (Provision B.3.b.(4))? This component is necessary if Copermittees wish to included hydromodification management exemptions beyond those allowed in	Erica Ryan SDRWQCB

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		the Permit and allow the Alternative Compliance option (for offsite structural BMPs). This component needs to be presented to the Consultation Panel for input/discussion.	
Gen Comm 3		As the Copermittees are seeking to invoke Provision B.3.c. (compliance with receiving water limitations), more discussion is needed to demonstrate <i>how</i> the proposed goals, strategies, and schedules will result in protection of all recognized beneficial uses of the receiving waters. Provision B.3.c also requires descriptions of annual milestones, which were not provided in the Draft Plan. This component, including the analyses, needs to be presented to the Consultation Panel for input/discussion.	Erica Ryan SDRWQCB
Gen Comm 4		More detail and commitment is required to implement the strategies expected to achieve the goals. The Water Quality Improvement Plan is not supposed to be a “plan to plan” but rather a plan that describes the activities the Copermittees will undertake that will result in measurable improvements to water quality.	Erica Ryan SDRWQCB
Gen Comm 5		The Draft Plan did not contain a description of optional strategies and if/when they will be implemented. This requirement pertains to each Copermittee (see Provision B.3.b.(1)(b)).	Erica Ryan SDRWQCB
Sec 2.1  1	Table 4	Table 4 describes required load reductions for fecal coliform. Attachment E of the Permit requires load reductions for total coliform and enterococcus, so these constituents must be addressed in the Draft Plan also.	Erica Ryan SDRWQCB
Sec 2.1  2	Table 4	Table 4 demonstrates that a sizeable percentage of the required fecal coliform load reduction will come from structural BMPs in the Laguna Hills and Aliso HSAs. The San Diego Water Board is concerned that structural BMPs have a long lead time before actually being installed, and therefore the trigger required for implementation must be more clearly described in the text.	Erica Ryan SDRWQCB
Sec 2.1  3		The load reductions expected from rooftop disconnections in Table 4 appears artificially high because it requires cooperation of individual homeowners. What information was used to develop those load reduction numbers? Also, tracking these BMPs to ensure performance might be challenging.	Erica Ryan SDRWQCB
Sec 2.1  4	Table 4	Table 4 load reductions from redevelopment through LID implementation appears artificially low when compared to other load reduction strategies identified. The definition in the Draft Plan appears to exclude new development for this load reduction strategy. What information was used to develop those load reduction numbers ?	Erica Ryan SDRWQCB

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Sec 2.1  5		Why was the Baby Beach TMDL and Heisler Park ASBS not discussed in the numeric goals of the Draft Plan? Provision B.3.c requires the inclusion of all TMDLs and ASBS receiving waters if the Copermittees are seeking to invoke Provision B.3.c.	Erica Ryan  SDRWQCB
Sec 2.2		Since a numeric goal and annual milestones were not provided, the San Diego Water Board cannot comment on the adequacy of these important elements.	Erica Ryan  SDRWQCB
Sec 2.3  1		The San Diego Water Board suggests using the term “effectively” instead of “substantially” eliminate dry weather flows to be consistent with the MS4 Permit. We also suggest the Draft Plan explain that Copermittees have Illicit Discharge Detection and Elimination programs designed to effectively eliminate non-storm water flows from discharging to or from the MS4 system.	Erica Ryan  SDRWQCB
Sec 2.3  2		The goals described in Table 10 are very unclear. Where will the reduction in dry weather flows be measured? Is it at the outfall or in the creeks? How many outfalls are known to have chronic dry weather flows? Are the outfalls primarily located in one HSA or spread throughout the San Juan HU? More justification is required for the 25 year schedule in light of the requirement to effectively eliminate non-storm water flows.	Erica Ryan  SDRWQCB