

**Questions from San Diego Water Board Members
November 13, 2012 Public Workshop on
Tentative Order No. R9-2013-0001
Regional Municipal Separate Storm Sewer Systems (MS4) Permit
Orange County Stormwater Program**

Hydromodification

1. *When accounting for the impacts caused by hydromodification at a development or redevelopment site, how far back should the analysis go, pre-project or predevelopment? {Grant Destache}*
 - This decision should depend largely on the condition of the receiving water that the development or redevelopment project discharges into and if it is restorable.
 - If the receiving water is in its natural state or only slightly modified and it is possible to restore the receiving water then the analysis should go back to pre-development.
 - If the receiving water is an engineered system that serves a flood control purpose, and it is not feasible to restore its original flow path and slope, due to adjacent development then no analysis should be performed as this should be an exempt receiving water as there is no environmental benefit to implementation of onsite hydromodification controls.
 - The SCCWRP Technical Report 667, the results of the August 30, 2012 Hydromodification Management Meeting, and the recent SWRCB Hydromodification Management Workshop on November 28, 2012 all recognize that:
 - o hydromodification management is not a one size fits all approach;
 - o criteria for hydromodification analysis is largely a policy decision,
 - o and that ability to restore or rehabilitate receiving water bodies should be a primary consideration in the application of hydromodification management measures.
 - If a one size fits all approach is taken and all projects are required to meet the same criteria, many projects will not be built, especially the small redevelopment projects due to cost. This situation will be a lost opportunity to improve water quality through redevelopment as redevelopment projects would still be required to meet the LID requirements, and if the projects are not built due to cost these water quality improvements will not be realized.

Recommendation:

- This decision should depend largely on the management goals for the specific receiving water that the development or redevelopment project discharges into. Is it, indeed, restorable?

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2. *How can the San Diego County Hydromodification Plan (HMP) be implemented into the MS4 Permit in a more succinct manner? How can we implement the rules and regulations in the San Diego County HMP, because we really have not had it in place for very long before we “throw it down the drain?” {Grant Destache}*

- Although the question references only the San Diego County HMP, the Orange County Permittees have also spent considerable time, effort, and funds to develop the South Orange County HMP.
- The South OC HMP uses the most current hydromodification science in the development of a practical HMP that specifies criteria that can be achieved and special conditions that are warranted based on achievable restoration in the watershed.

Recommendation:

- The South OC HMP can be incorporated into the permit by referencing the South Orange County HMP dated October 25, 2012.

3. *How do you document predevelopment or naturally occurring on a map? How is “naturally occurring” defined? How far back do you go to document predevelopment? 100 years? 500 years? Before the Indians were picking up acorns? {Gary Strawn}*

- Identifying “naturally occurring” conditions for redevelopment sites is extremely difficult as in many cases there are no historical records of the natural condition of the site.
- In cases where natural conditions of a site are not known the best approach is to use an undeveloped natural site in proximity to the re-development site as a reference site.
- The vegetative cover, soil type, and slope will most affect the hydrology of a site and so approximating these conditions for a re-development site using a natural reference site where these parameters can be measured is a way to approximate the natural conditions of a redevelopment site.
- However, locating a natural reference site in proximity to a redevelopment site is difficult, as the entire sub-watershed or watershed may be developed.
- Additionally the conditions of the natural reference site maybe totally different than the “naturally occurring” conditions of the re-development

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site as vegetative cover, soil type, and slope may have been very different and without historical records there is no way of knowing the actual “naturally occurring” conditions of a re-development site.

- The question of how far back you go to document pre-development is a policy question that should be decided not only by the Regional Board staff, but by reaching consensus with all watershed stakeholders on what the level of “restoration” of the watershed should be. It may not be feasible to go back very far, however as there just are not many historical records that go back 100 years, and none that go back 500 years.

4. Why was the concrete/hardened channel exemptions removed? {Eric Anderson}

- The exemption for concrete and hardened channels was included in the SD HMP based on detailed technical analysis and coordination among watershed stakeholders and the SD Board staff in the development of the HMP. This same exemption is included in the South Orange County HMP, although yet to be approved by the Regional Board.
- The concrete and hardened channel exemption was likely removed by Board Staff with the intention that these channels will be returned to a natural condition.
- Channels were hardened in the past because to enable them to serve a flood control and public safety purpose. Because they serve this purpose and because in most cases where they are implemented there is development in the floodplain, which rely on the engineered channels for flood protection, there will be very few, if any, opportunities for restoration of the receiving water.

Recommendation:

- Reinstate the hardened channel exemption into the permit.

5. Copermitees commented that road projects have unique space limitations and may not be able to meet retention & HMP requirements. Should road projects be treated differently and could requirements in the new CALTRANS Storm Water Permit be used to provide more options? {Grant Destache}

- Road projects are different than other types of land development projects due to their linear nature and their space constraints.

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- These constraints are exacerbated in a retrofit roadway condition due to limited right-of-way and utilities.
- For new roadways in some conditions the amount of land needed to meet these requirements is significant and mitigation may create additional adverse environmental impacts.
- Compliance with the USEPA Guidance for Green Streets is the appropriate requirement for the San Diego Regional Permit as most of the other MS4 Permits in Southern California including Los Angeles, Ventura, Orange County (SAR), Riverside (SAR), and San Bernardino specify its use for compliance.

Recommendation:

- Create “Green Streets” compliance approach for street and highway projects.

6. *If a project is unable to comply with the HMP requirements at the site, how far away from the site can the project proponent place their retention basins? What other limitations exist when not placing a BMP on site? There is a concern that low income areas will become targets for placement of the retention basins.*
{Tomas Morales}

- Proximity of offsite basin placement, effectively alternative compliance, is better understood when there is an understanding of the conditions of a sub-watershed and/or watershed and the goals for restoration of the sub-watershed and/or watershed have been identified.
- Optimal basin locations to achieve alternative compliance are those locations where the most benefit will be achieved to help rehabilitate the sub-watershed and/or watershed.
- The limitations of not placing a BMP on a site is that that site may not be achieving pre-development hydrologic conditions, however there are sites where this is not necessary including sites that discharge into engineered channels designed to accept additional runoff from development.
- It may be more beneficial not to restore hydrologic function at a particular project site and instead restore hydrologic function at a site that will be more beneficial for rehabilitation of the sub-watershed and/or watershed.

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Cost -

1. What is the cost of not implementing the provisions in the Tentative Order? (e.g. beach closures, ill health that taxpayers have to pay for through their private health plans or public costs, deaths) {*Henry Abarbane*}
 - No response
2. Lots of big cost numbers were used during the meeting. (e.g. \$2 to \$4 billion over 20 years) How much do the Copermitees spend now? What is being spent now and on what? {*Henry Abarbane*}
 - See attached Table 1
3. What is the breakdown of costs? What is the timeframe of these costs? How much is already being spent? {*Tomas Morales*}
 - See Attached Table 1

Total Maximum Daily Load (TMDL) –

1. *Can the Copermitees meet the bacteria levels that are specified in the Total Maximum Daily Loads (TMDLs)? What sorts of technologies are available to the Copermitees to treat bacteria to the levels specified in the TMDLs?* {*Grant Destache*}
 - To answer the question of what is achievable, it is critical to understand that there is a significant distinction between the bacteria levels that are specified in the TMDLs (in the Basin Plan Amendments) and how the TMDLs have been incorporated into the Permit.
 - o The TMDL BPAs establish mass-based limits while the Permit establishes the TMDLs as concentration-based limits.
 - o Based upon the implementation of many projects to date in Orange County, Permittees can make significant strides in attaining the mass-based WLAs.
 - o Attainment of the concentration-based limits, 100% of the time, is unlikely achievable

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- Permittees can make significant improvements, but attainment of the final WLAs is not guaranteed given the effectiveness of BMPs and treatment technologies
 - o The International Stormwater BMP Database compares the performance of various conventional stormwater BMP types in achieving wet-weather effluent concentrations of FIB. The Database does not identify any stormwater BMP types that can achieve the effluent concentrations that are required for Fecal Coliform or for Enterococcus.
 - o Many projects have been implemented locally. Projects have included constructed wetlands, dry weather flow reductions (achieved via water district drought restrictions), channel restoration, as well as high-tech solutions (pumping, multi-step filtration, and ozone or ultraviolet radiation).
 - o The projects have resulted in significant reductions in the mass load of bacteria and concentrations of FIB, achieving up to 99% reductions for certain indicators. However, attainment of the concentration-based water quality standards 100% of the time has not been achievable.
- Therefore, it is important to ensure that the TMDLs are incorporated properly and to consider how compliance with the TMDLs will be assessed
 - o Mass-based WLAs are consistent with the assumptions and requirements of the Basin Plan Amendments
 - o Mass-based reductions are significantly more achievable than concentration-based limits (where 100% of samples must meet the limits)
 - o BMP-based compliance encourages significant reductions while still providing strong enforcement for Permittees that fail to implement approved plans
 - o See additional bullets on why compliance matters under #3
- The Beaches and Creeks TMDL and the Baby Beach Bacteria TMDL explicitly acknowledge a reassessment/re-opener of the TMDL. Therefore, feasibility of achieving the TMDL WLAs is dependent upon consideration of additional assessments and revisions to the TMDLs, as appropriate and warranted.
 - o The 0%-exceedance target set in the TMDLs was based on 0-3% exceedance seen in beach data, not creek data. The preliminary results from the first year of SCCWRP's "natural reference stream"

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study showed that natural dry-weather wildlife-derived FIB exceedance rates in San Diego Region's creeks was very far from the proposed standard of 0%: 34% of reference creek samples exceeded the single-sample maximum for Enterococcus and 71% exceeded the Enterococcus geomean. It is therefore likely that the wet weather exceedance rate in creeks may approach 100%, rather than 22% as at the beach .

- o The consensus of both Federal EPA and the Beach Water Quality Work Group experts collected at SCCWRP on Nov 28-29 was that this wildlife-derived FIB indicates a significantly lower risk to human health than the threshold enshrined in the Basin Plan's sewage-derived FIB WQOs.
- o An explicit re-opener in the Permit provides a mechanism to:
 - Explicitly acknowledge that revisions to the TMDLs may be warranted
 - Ensure such assessments occur prior to triggering final compliance requirements (such as numeric effluent limitations)

Recommendations:

- Ensure TMDLs are properly incorporated into the Permit as mass-based limits, not as concentration-based limits
- Establish BMP-based compliance for the TMDL provisions
- Provide an explicit re-opener provision in the Permit to ensure additional information is considered in the TMDLs/Permit prior to triggering final compliance requirements

2. Can the Copermittees achieve adequate waste load reductions in MS4 discharges to meet the effluent limitations and compliance dates for bacteria in the Tentative Order? {Grant Destache}

- See Responses under #1 above.
- In addition, for Baby Beach:
 - o The TMDL established mass-based WLAs
 - o The compliance schedule was based upon an assessment of existing conditions and current attainment of certain WLAs

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- o As existing conditions met certain WLAs, the compliance date was set equal to the effective date of the TMDL (2009)
- o By establishing concentration-based WLAs, the WLAs are not only incorrectly incorporated, but Permittees will not be provided any time to come into compliance with the final WLAs that were established based upon an assessment of mass-based allocations, not concentration-based allocations

Recommendation:

- Properly incorporate the TMDLs into the Permit as mass-based WLAs

3. *What are the benefits of BMP based compliance with the TMDLs for bacteria compared to compliance with Water Quality Based Effluent Limitations (WQBELs)? {Grant Destache}*

- The Tentative Order establishes WQBELs expressed as numeric effluent limitations (NELs)
- Permittees request that the Regional Board establishes WQBELs expressed as BMPs (BMP-based compliance)
- The method of compliance matters
 - o NELs do not provide the Regional Board with discretion for enforcement and subjects Permittees to Mandatory Minimum Penalties (MMPs)
 - o A Permittee that does everything and a Permittee that does nothing are treated equally and therefore equally subject to MMPs
 - o With BMP-based compliance, Regional Board has discretion in enforcement and could continue to work with the Permittee doing everything but could enforce on the Permittee that does nothing
 - o Compliance is further complicated by the inappropriate incorporation of the TMDLs into the Permit where the compliance point is concentration-based rather than mass-based
 - o Local projects demonstrate that up to 99% reductions can be achieved, whereas 100% attainment of concentration-based limits are infeasible
 - o BMP-based compliance would allow the Regional Board to exercise discretion to continue to work with the Permittee that has achieved

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the 99% reduction whereas NELs would subject the Permittee to MMPs

- o Baby Beach implementation is a great example of the extensive actions taken by Permittees, resulting in the beach being delisted. NELs would subject Permittees to MMPs for a single exceedance at a delisted beach whereas a BMP-based approach would provide Regional Board the discretion as to the need for any additional actions/enforcement.
- BMP-based compliance is not a “safe harbor”
 - o Can be structured to ensure Permittees are held accountable via discrete milestones and actions; ensure Permittees provide reasonable assurance that actions will attain WQBELs; ensure Regional Board can enforce where Permittees are not attaining milestones/implementing actions
 - o Los Angeles Regional Board and Board staff provided testimony during adoption hearing (November 8, 2012) that the watershed approach is not a “safe harbor”
- Numeric Effluent Limitations are not feasible
 - o EPA’s memorandum discusses feasibility in terms of implementation and attainment of WLAs, not in terms of calculating a WLA
 - o State Board Blue Ribbon Panel Report found NELs to be infeasible for municipal stormwater discharges

Recommendation:

- Establish BMP-based compliance as an option for Final WLAs

4. Address the issues that Ruth Kolb, City of San Diego raised regarding the Bacteria TMDLs. Clarify how we incorporated the Bacteria TMDLs into the Tentative Order to demonstrate that we incorporated it into the Tentative Order the way it was intended to be implemented. {Eric Anderson}

- TMDLs established mass-based WLAs whereas the Tentative Order established concentration-based limits

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- Tentative Order does not recognize the CLRPs and the watershed-specific milestones and monitoring requirements provided for in the BPA
 - Tentative Order does not consider the re-opener provided explicitly in the BPA
 - Tentative Order does not consider BMP-based compliance as an option though it is provided as an option in the BPA
5. *Throughout the presentations, it was said that it is infeasible to cleanup bacteria. Provide an explanation as to why, it is not the case, that cleanup of bacteria is infeasible. IN OTHER WORDS... Explain why it is in fact feasible to cleanup bacteria. Is it feasible to cleanup bacteria to the levels in the TMDLs? {Tomas Morales}*
- Concept of feasibility is based upon how the TMDLs were inappropriately incorporated into the Permit
 - Attaining the TMDLs is significantly more feasible if the Permit is consistent with the assumptions and requirements of the BPAs, as noted in response to #4 above

Other

1. *Clarify if the Tentative Order is a one size fits all approach. Is the Water Quality Improvement Plan a one size fits all approach? {Grant Destache}*
- The WQIPs are a welcomed and necessary shift in the development and implementation of stormwater programs.
 - o The WQIP framework (Provision B) allows for the identification and development of a program around the highest priority water quality conditions within a specific watershed.
 - o The WQIP allows for the integration of all program elements and focuses the efforts on the highest priorities for each watershed through the customization of actions and strategies.
 - However, the Tentative Order provisions (especially Provision E, JRMP) seem to then take a counter, “one-size fits all approach”.
 - o For example, the Existing Development provisions dictate specific BMPs that must be implemented, regardless of the high priority water quality concerns within a watershed.
 - o Thus, these provisions become “additive” instead of “prioritized” and supportive of the overarching WQIP.

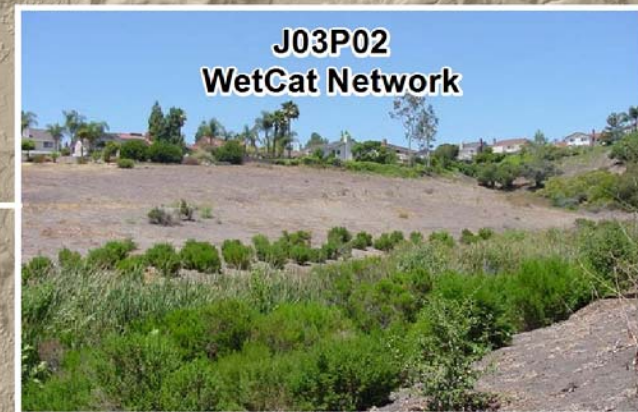
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Recommendation:

- The Tentative Order should be modified so that the WQIPs and related JRMPs can be streamlined and focus on the highest priorities within each watershed.
2. Further explain the Illicit Discharge Detection and Elimination requirement in Provision E.2.a.(1) and (3) of the Tentative Order that pertains to discharges from footing drains and fountain drains. *{Eric Anderson}*
- No response.

Project Name	BMP Type	Treatment Area (Acres)	Average Bacteria Load Reduction Dry (%)	Average Load Reduction Wet (%)	Watershed Dry Reduction (%)	Watershed Wet Reduction (%)	Year Active	BMP Construction	Maintenance / Year
Catch Basin Debris Gates (M2 Tier 1 Project) (Laguna Niguel)	Catch Basin Inserts	96	68%	85%	0.29%	0.37%	2012	\$72,000	\$1,680
Catch Basin Debris Gates (M2 Tier 1 Project) (Lake Forest)	Catch Basin Debris Gates	54	9%	14%	0.02%	0.03%	2012	\$30,000	\$945
Catch Basin Inserts (Laguna Woods)	Kristar Flogard Filters	109	9%	85%	0.04%	0.42%	2007	\$80,000	\$1,800
Dairy Fork Wetland	Treatment Wetland	1,368.00	95%	0%	5.82%	0.00%	2014	\$716,000	\$10,000
El Toro Frontage Road Storm Drain Improvement Project (Lake Forest)	Catch Basin Filters	1	90%	50%	0.00%	0.00%	2006	\$100,000	\$500
El Toro Traffic & Landscape Project (Lake Forest)	Water Conservation	5	40%	0%	0.01%	0.00%	2006	\$1,303,640	\$73,700
English Creek Aquatic Restoration Project (Mission Viejo)	Restoration	1,247.00	35%	10%	1.96%	0.56%	2015	\$4,470,000	n/a
Glenwood Wetland J06P03 Subwatershed (Aliso Viejo)	Treatment Wetland	230	95%	0%	0.98%	0.00%	2011	\$450,000	\$10,000
J01P28 Urban Runoff Treatment Facility	UV and Filter Media Treatment	609.4	96%	0%	2.62%	0.00%	2012	\$575,000	\$80,000
J03P01 Restoration (Laguna Niguel)	Channel Restoration	1,099	30%	0%	1.48%	0.00%	2003	\$75,000	\$5,000
Laguna Hills Wetland at J05 (Laguna Hills)	Treatment Wetland	977	65%	0%	2.85%	0.00%	2003	\$300,000	\$3,000
Middle Sulphur Creek Restoration (Laguna Niguel)	Channel Restoration	2,300	20%	30%	2.06%	3.09%	2008	\$2,000,000	\$25,000
Munger Planted Sand Filter (Lake Forest)	Sand Filter	640	90%	0%	2.58%	0.00%	2012	\$282,600	n/a
Narco Channel Restoration (Aliso Viejo)	Channel Restoration	141	59%	10%	0.37%	0.06%	2007	\$77,729	\$466
Narco Channel Restoration (Laguna Hills)	Channel Restoration	1,156	59%	10%	3.06%	0.52%	2007	\$637,266	\$3,824
Narco Channel Restoration (Laguna Niguel)	Channel Restoration	517	59%	10%	1.37%	0.23%	2007	\$285,005	\$1,710
Oso Parkway Landscape Improvements (Laguna Hills)	Water Conservation	7	40%	0%	0.01%	0.00%	2010	\$1,300,000	\$3,000
Oso Parkway South Side Wetland (Laguna Hills)	Treatment Wetland	30	95%	0%	0.13%	0.00%	2012	\$1,875,000	\$3,000
Pollution Reduction and Water Conservation Retrofit Program within J01P08 Sub-watershed (Lake Forest)	Water Conservation	9.35	40%	0%	0.11%	0.00%	2008	\$12,000	n/a
Public Development Water Quality Management Plan (WQMP) Projects- Alicia Skate Park (Laguna Niguel)	Continuous Deflection System (CDS)	4	0%	44%	0.00%	0.01%	2003	\$100,000	\$1,000
Public Development Water Quality Management Plan (WQMP) Projects- La Paz Sports Park (Laguna Niguel)	Catch Basin Filters/Biofiltration Basins	4	90%	50%	0.02%	0.01%	2003	\$150,000	\$1,200
Public Redevelopment Water Quality Management Plan (WQMP) Projects- City Hall (Laguna Niguel)	Stormwater Treatment Vaults/Bioswales	4	40%	44%	0.01%	0.01%	2011	\$150,000	\$1,000
SCWD Water Harvesting Project	Flow Diversion	18,192	8%	0%	0.91%	0.00%	2015	\$525,000	n/a
SmarTimer Edgescape Evaluation Project (SEEP) (Aliso Viejo)	Water Conservation	6	40%	0%	0.01%	0.00%	2008	\$67,937	\$500
SmarTimer Edgescape Evaluation Project (SEEP) (Laguna Hills)	Water Conservation	4	40%	0%	0.01%	0.00%	2008	\$153,235	\$2,400
Smartimer Edgescape Evaluation Project (SEEP) (Laguna Niguel)	Water Conservation	1.36	40%	0%	0.00%	0.00%	2008	\$46,000	\$500
SmarTimer Edgescape Evaluation Project (SEEP) (Laguna Woods)	Water Conservation	5.2	40%	0%	0.01%	0.00%	2008	\$59,853	\$500
Smartimer Edgescape Evaluation Project (SEEP) (Lake Forest)	Water Conservation	1.2	40%	0%	0.00%	0.00%	2008	\$13,950	\$3,650
SmarTimer Edgescape Evaluation Project (SEEP) (Mission Viejo)	Water Conservation	74	40%	0%	0.13%	0.00%	2008	\$300,000	n/a
Sulphur Solution "Control" Subproject (Laguna Hills)	Catch Basin Debris Gates	168	68%	85%	0.51%	0.64%	2008	\$168,000	\$5,800
Sulphur Solution "Control" Subproject (Laguna Niguel)	Catch Basin Debris Gates	120	68%	85%	0.37%	0.46%	2008	\$90,000	\$2,100
Sulphur Solutions "Green Back" Water Conservation and Pollution Prevention Project (Laguna Niguel)	Water Conservation	16	64%	18%	0.05%	0.01%	2006	\$342,000	\$9,600
Sulphur Solutions "Green Back" Water Conservation and Pollution Prevention Project- Landscape Renewable Rebates (Laguna Hills)	Water Conservation	1	64%	18%	0.00%	0.00%	2006	\$107,614	n/a
Upper Sulphur Restoration (Laguna Niguel)	Channel Restoration	1,322	56%	0%	3.32%	0.00%	2007	\$1,400,000	\$65,000
Wetland Capture and Treatment at J03P02 (Laguna Niguel)	Treatment Wetland	538	95%	0%	2.29%	0.00%	2004	\$469,400	\$29,200
Wood Canyon Emergent Wetland at J02P08 (Aliso Viejo)	Treatment Wetland	313	96%	0%	1.35%	0.00%	2005	\$240,000	\$5,000
Aliso Creek Watershed Subtotal		31,370			35%	6%		\$19,024,229	\$351,075
Salt Creek Ozone Treament Plant	Ozone Treatment	4,500						\$6,900,000	\$130,000
TOTAL		35,870						\$25,924,229	\$481,075



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Miles

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Kilometers