California Council for Environmental and Economic Balance
101 Mission Street, Suite 805, San Francisco, California 94105
415-512-7890 phone, 415-512-7897 fax, www.cceeb.org

January 21, 2015

Ms. Jeanine Townsend, Clerk to the Board
State Water Resources Control Board
1001 I Street, 24th Floor [95814]
P.O. Box 100
Sacramento, CA 95812-0100

Via email: commentletters@waterboards.ca.gov

RE: **Comments to A-2236(a)-(kk)**

Dear Chair Marcus and Members of the Board,

The California Council for Environmental and Economic Balance (CCEEB) is pleased to submit these written comments for your consideration in regards to petitions challenging the 2012 Los Angeles Municipal Storm Sewer System (MS4) Permit (Order No. R4-2012-0175). These comments focus upon the State Water Resources Control Board's (State Water Board's) proposed Order (Order WQ 2015-), which is dated November 21, 2014.

CCEEB supports many aspects of the State Water Board's proposed Order, particularly those that focus on the implementation of sustainable, green infrastructure approaches to managing stormwater. However, CCEEB is concerned that the proposed Order's requirement to achieve full and strict compliance with water quality standards at some future date will discourage the implementation of sustainable solutions, and will lead to the implementation of environmentally inferior "gray infrastructure" treatment solutions. We believe this is an important issue that should be addressed as part of the State Water Board's Stormwater Strategic Initiative process, which is currently underway.

Additionally**, CCEEB respectfully requests that the State Water Board amend the proposed Order to use numeric requirements as goals, not as strictly enforceable legal requirements**. Further detail is provided below.

Background. CCEEB is a coalition of business, labor, and public leaders that advances strategies for a sound economy and a healthy environment. In 2012, CCEEB convened a Water Quality Task Force (task force) comprised of businesses and municipal and regional governmental entities with considerable direct experience administering water quality programs. In 2013, CCEEB issued the report *A Clear Path to Cleaner Water*, which focused on developing and advancing proposals to support the State's ambitious goals for the waters and environment of California—that is, to improve water quality, increase recycled water use, augment stormwater capture, develop local water supplies, and reduce energy use and greenhouse gas emissions. As noted in the report, furthering these goals will require planning for sustainability and a focus on collaborative, creative solutions, and will require agencies to focus resources efficiently so they can have the greatest impact.

CCEEB agrees that the proposed Order should support sustainable, green infrastructure solutions. CCEEB recognizes and appreciates that the State Water Board's draft Order supports an alternative compliance path that encourages the implementation of sustainable, green infrastructure approaches. For example, as stated in the draft Order at p. 49, "The alternative compliance path should encourage the use of green infrastructure and the adoption of low impact development principles … should encourage multi-benefit regional projects that capture, infiltrate, and reuse storm water and support a local sustainable water supply…" As detailed in our testimony to the State Water Board on December 16, 2014 [Attachment 1], CCEEB believes that green infrastructure projects offer a wide range of benefits, including better water quality and water supply enhancement. Multi-benefit, green infrastructure projects are generally more acceptable to local communities and easier to fund. They may provide recreation opportunities and are generally designed to be aesthetically pleasing. Finally, green infrastructure projects are typically more sustainable than traditional treatment controls, in that they often use less energy and fewer chemicals, produce less waste, and require less maintenance.

The U.S. Environmental Protection Agency's (EPA's) policies and guidance also support sustainable approaches. For example, EPA guidance "strongly encourages the use of green infrastructure and related innovative technologies, approaches, and practices to manage stormwater as a resource, reduce sewer overflows, enhance environmental quality, and achieve other economic and community benefits."[1] EPA's Clean Water and Drinking Water Infrastructure Sustainability Policy states that "Sustainable water infrastructure is critical to providing the American public with clean and safe water… water infrastructure can only be sustainable if the communities it serves are sustainable, and if local decision makers and citizens understand the value of water infrastructure and the services provided. Federal investments, policies, and actions should support water infrastructure in more efficient and

[1] Stoner, Nancy, and Giles, Cynthia 2011. Memorandum: Achieving Water Quality through Integrated Municipal Stormwater and Wastewater Plans. USEPA: October 27, 2011, at p. 2.

sustainable locations to best support existing communities, enhance economic competitiveness, and promote affordable neighborhoods."[2]

It may not be possible to achieve water quality standards under all conditions. The proposed Order appropriately recognizes that "the evidence in the Administrative Record is not sufficient to establish that the stormwater retention approach (a feature of the Enhanced Watershed Management Plans, or EWMPs) will in all cases result in achievement of final WQBELs and other TMDL-specific limitations" (proposed Order at p. 40). The proposed Order acknowledges that "we cannot say with certainty at this point that implementation will lead to compliance with receiving water limitations in all cases."

Although the record clearly indicates that best management practices (BMPs) and other types of stormwater controls can and do lead to significant water quality improvement, it should come as no surprise that they may not be able to achieve water quality standards under all conditions and in all cases. The State Water Board's "Blue Ribbon Panel" issued similar findings, stating that "[e]ven for conventional pollutants, there presently is no protocol that enables an engineer to design with certainty a BMP that will produce a desired outflow concentration for a constituent of concern."[3] The Blue Ribbon Panel also concluded, with respect to municipal stormwater, that "it is not feasible at this time to set enforceable numeric effluent criteria for municipal BMPs and in particular urban discharges."[4] (Note that the Blue Ribbon Panel did find that it may be feasible to establish an Action Level, set as an "upset value" clearly above the normal variability, in order to identify problem areas or discharges requiring additional attention.)

Because green infrastructure will improve water quality but is unlikely to produce effluent that achieves water quality standards under all conditions, many MS4 permittees will choose to implement treatment solutions (e.g., filtration, disinfection) that can be considered "gray infrastructure," if they believe they are required to consistently produce effluent that meets water quality standards at the end-of-pipe. Although hardscaped treatment systems are more likely to produce water that consistently has effluent concentrations less than water quality standards, gray infrastructure treatment systems will have a larger environmental "footprint"—typically they are concrete structures that require more maintenance, use more energy and/or treatment chemicals, produce more waste, and are less aesthetically attractive—than green infrastructure. MS4 permittees are unlikely to invest in green infrastructure solutions if they believe that additional treatment will be required in the future to meet water quality standards

[2] USEPA, 2013. EPA's Clean Water and Drinking Water Infrastructure Sustainability Policy. Available at http://water.epa.gov/infrastructure/sustain/upload/Sustainability-Policy.pdf.
[3] Storm Water Panel Recommendations to the California State Water Resources Control Board, 2006. The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities. June 19.
[4] Ibid.

and to demonstrate permit compliance. Examples of "gray infrastructure" are included in the PowerPoint presentation made by Dr. Susan Paulsen to the State Water Board on December 16, 2014. [Attachment 1]

Further, even investing in expensive, sophisticated treatment systems may not result in attainment of water quality objectives in receiving waters. Water quality objectives for indicator bacteria (e.g., *E. coli*, enterococcus) provide perhaps the clearest example of the difficulty that will be faced by MS4 permittees attempting to comply in a strict sense with water quality standards. During the development of the Los Angeles River Bacteria TMDL, the City of Los Angeles and other stakeholders, together with the Los Angeles Regional Board, developed a comprehensive study of indicator bacteria in the Los Angeles River (the CREST study).[5] The CREST study involved the collection of samples during dry weather conditions on six different dates; concentrations of indicator bacteria were measured in the river itself and in inflows to the river (both tributaries and storm drains). Concentrations of human-specific bacteroidales, which are used to indicate human inputs of indicator bacteria, were also measured. The CREST study found that bacteria in inflows to the river totaled only 10-50% of the bacteria measured at the downstream end of the river reach; in other words, between 50% and 90% of the bacteria measured at the downstream end of the reach came from in-channel sources, potentially including wildlife, birds, and/or regrowth within the channel itself. Further analyses performed during the CREST study found that in one reach of the river, concentrations of indicator bacteria rose to levels higher than water quality objectives, while concentrations of human-specific bacteroidales remained nearly constant, indicating that the indicator bacteria in that reach were from non-human sources.

The Southern California Coastal Water Research Project (SCCWRP) has conducted sampling to characterize the water quality of dry and wet weather flows from natural, undeveloped open space land uses throughout Southern California.[6] The "natural loadings studies" found that concentrations of indicator bacteria in runoff from open spaces frequently exceed water quality objectives, particularly during storm events. (The SCCWRP studies also found that concentrations of metals and other pollutants in runoff from natural, open space areas frequently exceed water quality criteria, particularly during storm events.)

Additional data and information indicates that even treated effluent discharged to a stream with low levels of indicator bacteria experience bacteria growth, such that treated effluent discharged to a stream shows concentrations of indicator bacteria that exceed water quality

[5] CREST (Cleaner Rivers through Effective Stakeholder TMDLs), 2008. Los Angeles River Bacteria Source Identification Study: Final Report.

[6] See, for example, LL Tiefenthaler, ED Stein, and GS Lyon. November 2008. Fecal Indicator Bacteria (FIB) Levels During Dry Weather for Southern California Reference Streams. Presented at Society of Environmental Toxicology and Chemistry (SETAC) 29th Annual Meeting; and Stein, E.D., Tiefenthaler, L.L., and Schiff, K., 2008. Comparison of stormwater pollutant loading by land use type, available at http://ftp.sccwrp.org/pub/download/DOCUMENTS/AnnualReports/2008AnnualReport/AR08_015_027.pdf

objectives a short distance downstream of the point of discharge. For example, the County of Orange installed a treatment system that used filtration and ultraviolet disinfection to treat runoff from a 60-inch storm drain to REC 1 (recreational use) water quality standards.[7] Although the treatment plant was successful in reducing bacteria concentrations in treated water, downstream samples collected within the receiving water indicated that "[t]he treated water experiences a rapid regrowth of the bacteria concentration after being released back into the stream." These increases in concentrations of indicator bacteria, which occur rapidly within the receiving water, are beyond the control of any MS4 permittee.

Appropriate methods for calculating numeric effluent limits for storm water are not available. As detailed within the CCEEB 2013 report, the methods currently used to calculate effluent limitations for NPDES permits are not technically appropriate for storm flows. Storm flows exhibit highly variable flow rates, flow volumes, and constituent concentrations, and pollutant concentrations can vary by an order of magnitude or more on timescales of an hour or less, and just as widely between storm events or between sites in relatively close proximity. Pollutants can enter storm flows from both natural and anthropogenic sources, and stormwater quality is a complex function of watershed size, slope, soils, vegetation types, rainfall (storm size and intensity), antecedent conditions, land use, and climate. Calculating appropriate numeric limits for storm flows will require the development of new methodologies, because existing procedures are typically based on low-flow receiving water conditions (which do not occur during storms) and statistical assumptions that do not hold for storm flows (e.g., that pollutant concentrations follow normal or log-normal distributions, as is typical for traditional point sources such as effluent from wastewater treatment plants). As detailed by the Blue Ribbon Panel, calculation of appropriate numeric effluent limits for stormwater will likely also require development of a "design storm" and/or "compliance storm" in recognition of the difficulty of treating the large volumes of runoff generated by large storm events. The State Water Board may also wish to consider the implementation of "deemed-compliant" approaches, whereby a municipality that installs certain BMPs would be deemed to be in compliance with its NPDES permit; such an approach has already been used in the Los Angeles Region's Trash TMDLs and is proposed for use in the State Water Board's proposed Trash Policy.[8]

These issues should be addressed within the Stormwater Strategic Initiative process. The State Water Board's proposed Order does not address the widely recognized technical and scientific challenges associated with calculating appropriate numeric effluent limits for stormwater discharges. We understand that the State Water Board's Stormwater Strategic

[7] County of Orange Resources and Development Management Department, Watershed and Coastal Resources, 2005. *Final Report, Agreement 01-227-550-0, Aliso Beach Clean Beaches Initiative, J01P28 Interim Water Quality Improvement Package Plant Best Management Practices*. February 2005.

[8] State Water Resources Control Board, 2014. Proposed Final Staff Report, Amendment to the Water Quality Control Plan for the Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. Available at http://www.waterboards.ca.gov/water_issues/programs/trash_control/docs/trash_sr_1214.pdf. December 31, 2014.

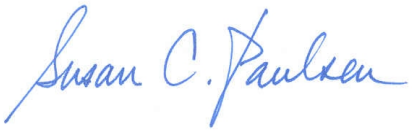
Initiative is intended, at least in part, to address many of these challenges. For this reason and those stated in this letter, it appears to be premature to impose numeric limits as strictly enforceable legal requirements applicable to MS4 permittees at this time, as there appears to be no supporting technical or scientific basis for this.

CCEEB and its Water Quality Task Force, as well as the California Environmental Dialogue, have been participating with State Water Board in the Stormwater Strategic Initiative process. We continue to offer our support and pledge our participation to this process, and are committed to assisting the State Water Board in developing a comprehensive approach to stormwater control that focuses on green and sustainable infrastructure investments. But to achieve that goal, it is our view that the proposed Order must be amended so that the numeric measures are not interpreted as strictly enforceable legal requirements.

CCEEB respectfully requests that the State Water Board amend the proposed Order to use numeric requirements as goals, not as strictly enforceable legal requirements.

We look forward to continuing to work with the State Water Board and the regional water boards on issues related to the regulation of storm flows, and we thank you for the opportunity to provide these comments. Please contact me, Jerry Secundy, at 415-512-7890 x116 or jerrys@cceeb.org, if you require additional information.

Sincerely,



Gerald D. Secundy
CCEEB President

Susan C. Paulsen, Ph.D., P.E.
Consultant to the CCEEB Water Quality Task Force

cc: Members of the CCEEB Water Quality Task Force
Dawn Koepke, CCEEB Project Manager for Water, Waste and Chemistry
Sue Gornick, Executive Director of the California Environmental Dialogue

Testimony to SWRCB Los Angeles MS4 Permit Appeal

Presented by:
Susan C. Paulsen, Ph.D., P.E.
Exponent

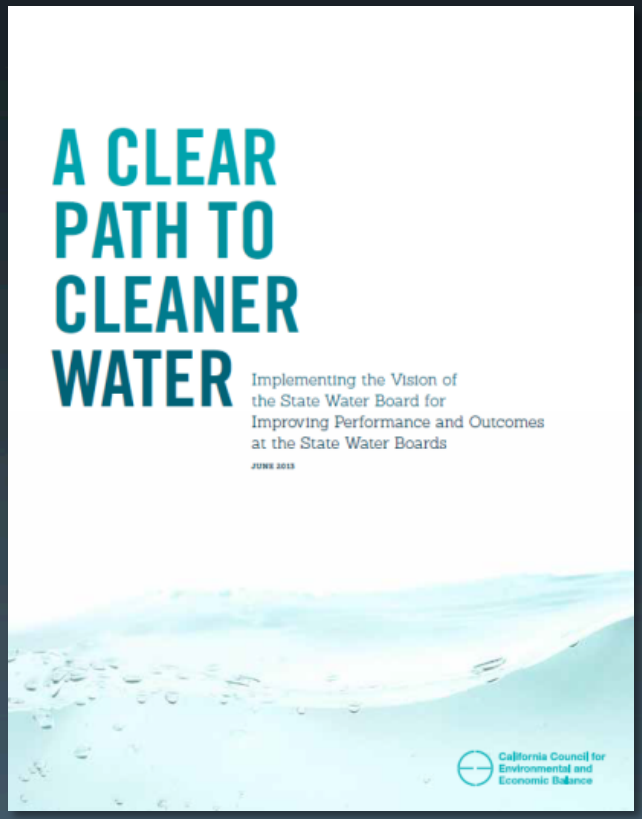
On behalf of:
California Council for Environmental and Economic Balance (CCEEB)

Exponent®

Summary of Testimony

- CCEEB and others support sustainable, green infrastructure approaches to stormwater regulation
- CCEEB supports the SWRCB Stormwater Strategic Initiative Process
- CCEEB requests that the SWRCB use numeric measures as goals, but not as strictly enforceable legal requirements, now or in the future

CCEEB Supports Sustainable, Green Infrastructure Approaches to Stormwater Control



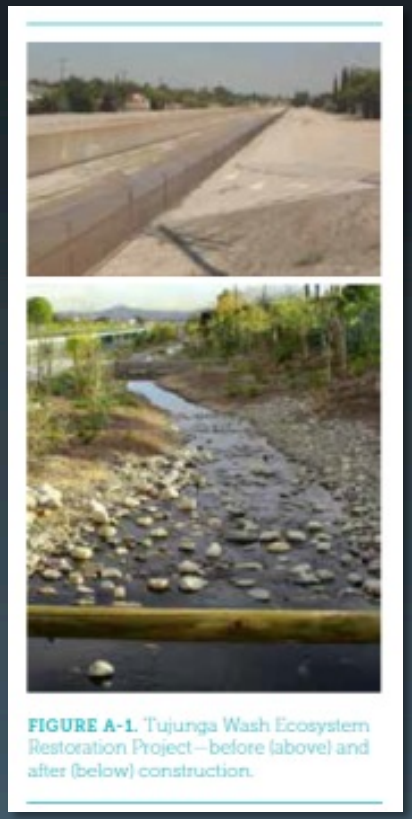


FIGURE A-1. Tujunga Wash Ecosystem Restoration Project – before (above) and after (below) construction.

Exponent®

Sustainable, Green Infrastructure Projects Offer a Range of Benefits

- Offer multiple benefits, including better water quality and water supply enhancement
- Promote multi-party partnerships and are often easier to fund than treatment controls
- Are generally more acceptable to the community
- Can provide recreation opportunities and visual amenities
- Generally use less energy and fewer chemicals, produce less waste, and require less maintenance

FIGURE A-3. Project Concept, Strathern Wetlands Park Project.

Exponent®

Draft Order Supports Sustainable, Green Infrastructure Approaches

"The alternative compliance path should encourage the use of green infrastructure and the adoption of low impact development principles … should encourage multi-benefit regional projects that capture, infiltrate, and reuse storm water and support a local sustainable water supply …"

(Draft Order at p. 49)

Exponent®

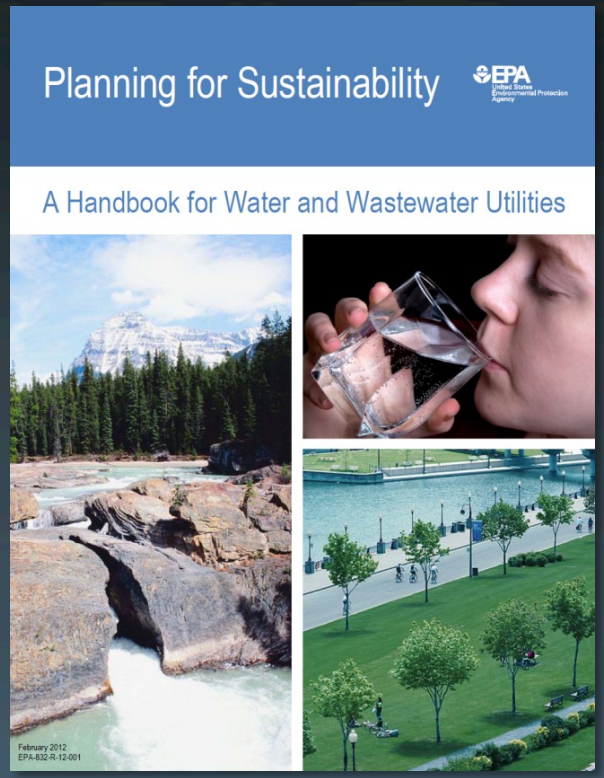
EPA Policy Supports Sustainable Infrastructure Approaches

EPA's Clean Water and Drinking Water Infrastructure Sustainability Policy

Statement of Policy

The Environmental Protection Agency (EPA), working with states and local governments, will develop guidance, provide technical assistance, and target federal SRF capitalization assistance to support increasing the sustainability of water infrastructure in the U.S. and the communities it serves

Sustainable water infrastructure is critical to providing the American public with clean and safe water. Further, water infrastructure can only be sustainable if the communities it serves are sustainable, and if local decision makers and citizens understand the value of water infrastructure and the services provided. Federal investments, policies, and actions should support water infrastructure in more efficient and sustainable locations to best support existing communities, enhance economic competitiveness, and promote affordable neighborhoods. Drinking water and wastewater systems



Exponent®

The Alternative to Green Infrastructure is Hardscape, Energy-intensive Treatment Controls

Source: Photo of Caltrans filter project,
210 Freeway in Pasadena (Paulsen, Dec 2014)

Source: Photo of Aliso Creek Bacteria Treatment Facility
(County of Orange, 2005)

Exponent®

Draft Order Recognizes Difficulty in Meeting Numeric Limitations Under All Circumstances

> 10. We find that the storm water retention approach is a promising approach to achieving receiving water limitations, but also find that the Administrative Record does not support a finding that the approach will necessarily lead to achievement of water quality standards in all cases. We revise the WMP/EWMP

(Draft Order at p. 73)

Exponent®

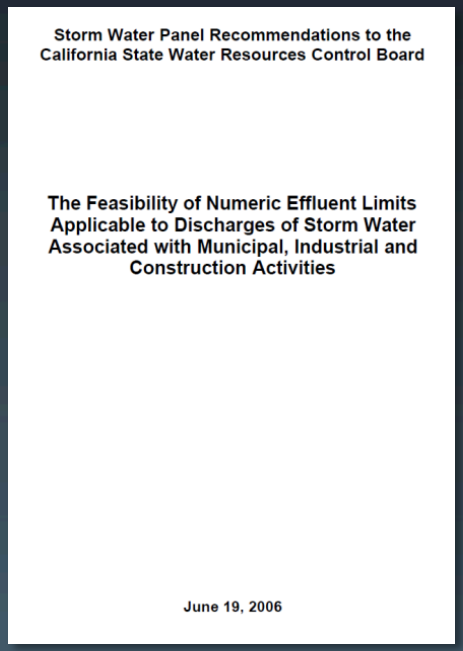
Stringent, Legally Enforceable Numeric Limits (Now or In the Future) Will Lead to Hardscape Treatment Solutions

Municipal Recommendations

It is not feasible at this time to set enforceable numeric effluent criteria for municipal BMPs and in particular urban discharges. However, it is possible to select and design them much more rigorously with respect to the physical, chemical and/or biological processes that take place within them, providing more confidence that the estimated mean concentrations of constituents in the effluents will be close to the design target. Moreover, with this more rigorous

Technical Issues

Even for conventional pollutants, there presently is no protocol that enables an engineer to design with certainty a BMP that will produce a desired outflow concentration for a constituent of concern. A possible exception is removal of Total Suspended Solids in extended detention basins, and some types of media filters. The typical approach for evaluating BMP pollutant removal efficiency has been *percent removal*; but observed removal efficiencies vary greatly from facility to facility and it has been demonstrated that percent removal varies directly with the inflow concentration.



Exponent®

CCEEB Respectfully Requests that the SWRCB Use Numeric Requirements as Goals

- CCEEB supports the SWRCB's Stormwater Strategic Initiative Process, which may address these issues, or may result in development of methods for calculating appropriate numeric measures
- Focus should be on green, sustainable, multi-benefit solutions, which do improve water quality
- Using numeric requirements as strictly enforceable limits (now or in future) will lead to undesirable results

Exponent®