

**VIA E-MAIL**



September 14, 2012  
Ms. Laurie Walsh, Senior Engineer  
San Diego Regional Water Quality Control Board  
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**Re: ADMINISTRATIVE DRAFT REGIONAL MUNICIPAL SEPARATE  
STORM SEWER SYSTEM (Tentative Order No. R9-2012-0011)**

Dear: Ms. Walsh

On behalf of the Building Industry Association of Southern California, Inc. (BIA/SC) and the Construction Industry Coalition on Water Quality (CICWQ) and the members of both, we appreciate the opportunity to provide comments on the Administrative Draft of the San Diego County Regional MS4 Permit (Administrative Draft Permit). We submit these comments in addition to and in support of comments made by our affiliate in San Diego County, the Building Industry Association of San Diego and its coalition partners, and comments submitted by Rancho Mission Viejo.

BIA/SC is a nonprofit trade association representing nearly 1,000 member companies, which together have nearly 100,000 employees. BIA/SC's members have, for decades, built the majority of the homes in Ventura, Los Angeles, Orange, Riverside, and San Bernardino Counties in southern California. CICWQ is a water quality coalition comprised of representatives from five industry trade associations (in addition to BIA/SC) involved in the development of public and private building, infrastructure and roads throughout California (Associated General Contractors, Engineering Contractors Association, Southern California Contractors Association, Engineering and General Contractors Association, and United Contractors). All of the above trade associations and their members and the union labor work force are affected by the post-construction runoff control requirements proposed in the Draft Permit, and this letter and supporting attachments are intended to provide the San Diego Regional Board staff with constructive suggestions for improvement.

We appreciate the Regional Board's release of the Administrative Draft Permit in April 2012, and the extensive stakeholder involvement process that ensued over the summer of 2012. The comments provided here are intended to further meet the permit's underlying objective of protecting and improving water quality within the watersheds administered by the San Diego Regional Board. Our comments, supporting attachments, and suggested redline permit language

Baldy View Chapter  
L.A./Ventura Chapter  
Orange County Chapter  
Riverside County Chapter

modifications reflect years of working not only on MS4 permits issued by the San Diego Board, but other MS4 permits administered by the Los Angeles, Santa Ana, and San Francisco Bay Regional Water Quality Control Boards.

We have four primary concerns with the Administrative Draft Permit content and the following discussion summarizes those concerns and provides the technical basis for those concerns including supporting attachments:

- 1. Administrative Draft Permit Provision E. 3.c.(2)(c) establishes a zero discharge standard for biofiltration-type LID BMPs that are designed with an outlet/underdrain. This type of LID BMP cannot meet the on-site design capture volume standard as it is written. Such a zero discharge standard is scientifically and technically unsound and unsupported.**

Biofiltration is an established LID BMP for use in attempting to mimic pre-development hydrology. The US EPA, in multiple guidance documents produced since 2006, have recognized the use of biofiltration-type systems such as curb contained biofilters, bioswales, rain gardens, and using landscape areas for impervious area disconnection as essential LID BMP elements to include in land development projects, a few of which are cited below. The inclusion of biofiltration BMPs in US EPA's menu is a reflection of the practical limitations to retention of stormwater – retention practices are not universally feasible or desirable. When appropriately selected and designed, biofiltration BMPs achieve high levels of pollutant removal, which may exceed pollutant removal achieved in retention BMPs, particularly in cases where retention BMPs are inappropriately applied.

The retention requirement is contrary to EPA's definition of LID because it disfavors development strategies designed to appropriately "filter" runoff, such as bioretention cells or other vegetated LID BMPs. There are five principal EPA documents regarding LID; and four of them identify the appropriate roles of biotreatment-type BMP, such as detention (i.e., slow down, treat through vegetation, and then release across property lines), filtration, and surface release of stormwater.

In a compilation of case studies by EPA, most of 17 exemplary projects included biotreatment elements, such as bioretention, swales, and wetlands. *See* U.S. EPA 841-F-07-006. Each of two case studies described in another EPA document (*see* Attachment 1 at pp. 1-2, EPA 841-B-00-005) included the use of underdrains, and the example in one of the two specifically fed into the MS4 system at issue. Another EPA document updated in January 2009 refers to the many practices used to adhere to LID principles of promoting a watershed's hydrologic and ecological functions, such as bioretention facilities and rain gardens. *See* Attachment 2 at p. 2, EPA-560-F-07-231 (describing "an under-drain system to release treated stormwater off site," permitting planted areas to "safely allow filtration and evapotranspiration of stormwater");

<http://www.epa.gov/owow/nps/lid/> (fact sheet describing under-drains used to release treated stormwater off site and permitting planted areas to safely allow filtration of stormwater). Thus, EPA's literature and guidance clearly recognize the important and even necessary role that biofiltration/biotreatment approaches play in real-world implementation of LID principles.

The National Research Council, in their 2008 Report to Congress titled "Urban Stormwater Management in the United States" cite the use of biofiltration and bioretention systems in improving water quality and in attempting to mimic predevelopment hydrology at many different site contexts and locations across the United States. The 2008 NRC report contains and cites numerous examples of using biofiltration type systems to reduce runoff volume and pollutant loads. The 2008 NRC Report clearly recognizes the role that biofiltration systems play in the LID BMP feasibility and selection process, and in achieving runoff management goals. The report states "In some situations ARCD (Aquatic Resources Conservation Design) practices will not be feasible, at least not entirely, and the SCMs [stormwater control measures] conventionally used now and in the recent past (e.g., retention/detention basins, biofiltration without soil enhancement, and sand filters) should be integrated into the overall system to realize the highest management potential." Note that the NRC report definition of ARCD includes both retention and biofiltration elements.

From a management perspective, a review of 4<sup>th</sup> Term Phase I MS4 permits within California (San Francisco Bay Area, Sacramento Area, North and South Orange County, Western and Southern Riverside County, and San Bernardino County) shows that the use of biofiltration to meet water quality volume and flow control performance standards is clearly allowed (See matrices submitted by BIA/SC\_CICWQ at the August 22, 2012 Stakeholder Meeting and provided to the Regional Board by Mark Grey on August 24, 2012). These Regional Boards in California recognize that biofilter-type LID BMPs are an integral component of applying site design principles which seek to mimic pre-development hydrology. Furthermore, these permits implement a clear LID BMP feasibility and selection process, one that first requires examination of on-site retention systems (infiltration, harvest and use, and evapotranspiration), before moving to the evaluation and potential selection of bioinfiltration (some infiltration achieved) and biofiltration systems. This feasibility evaluation hierarchy, which is clearly explained in the South Orange County and South Riverside County MS4 permits adopted by the San Diego Regional Board in 2009 and 2010, respectively, must be preserved and included in the next version of the Administrative Draft Permit.

In summary, the zero discharge standard established by the Administrative Draft Permit significantly narrows the definition of LID, which is contrary to US EPA guidance, the 2008 NRC Report, and the standards established in recently-adopted Permits by the San Diego Regional Board and other Regional Boards. In essence, the proposed provisions would establish a standard that (i) will be impracticable in a relatively large proportion of sites, and (ii) has not

been demonstrated to be necessary to protect receiving water quality. We provide in Attachment 3 suggested permit language to address the continued use of biofiltration.

- 2. A mitigation requirement is established when using flow-thru biofiltration-type LID BMPs to manage that portion of the SWQDv that is not retained on-site. This requirement is inconsistent with all other adopted Phase I MS4 permits in California and nationally. Biofiltration and bioretention BMPs are established LID practices; requiring accompanying mitigation of SWQDv that has already been biofiltered penalizes and dis-incentivizes use of these controls.**

Equally problematic, because it does not allow biofiltration type LID BMPs to meet the on-site storm water quality design volume (SWQDv) standard, is the current requirement in Administrative Draft Permit Provision E. 3.c.(2)(c) to “perform mitigation for the portion of the pollutant load that is not retained on-site.” In other words, the draft provisions would require that, if a project proponent cannot retain 100 percent of the SWQDv on-site, and must therefore use biofiltration LID BMPs (with a treated discharge), then the use and installation of these systems will trigger an off-site mitigation or in-lieu fee program participation requirement. This provision in the Administrative Draft Permit is technically unjustified, disfavors the use of all types of recognized biofiltration LID BMPs, and could theoretically require a project proponent to not only pay for the installation and O&M of a biofiltration LID BMP, but also require mitigation or fee payment for that portion of runoff managed by it.

Biofiltration BMPs including natural treatment systems such as those that are part of the Irvine Ranch Water District’s Natural Treatment System in Orange County (a regional example) can remove vast quantities of pollutant load, and provide other benefits such as habitat, flood control, and aesthetic, recreational and educational value. To relegate multi-benefit biofiltration or biotreatment BMPs applied at a site scale to a status inferior to on-site retention BMPs is not justified on a water quality basis, and is poor public policy, essentially depriving the region of an extremely important and effective approach to managing water quality.

While we agree that project proponents should be required to retain stormwater where technically and economically feasible, there are numerous conditions beyond a project’s control that make retention infeasible, undesirable and/or ineffective. For example, in achieving a zero discharge standard, it is necessary to either maintain pre-project ET (which is generally impracticable) or increase the volume of stormwater that is infiltrated (which is the common result). Over-infiltrating rainwater can have adverse consequences such as altering the natural flow regime of the receiving waters such that riparian habitat changes, mobilizing pre-existing contamination in shallow groundwater, increasing inflow and infiltration to sanitary sewers, causing damage from rising groundwater, and other potential effects. By discouraging the use of biofiltration LID BMPs where there are more appropriate than retention, the Administrative

Draft Permit irresponsibly encourages the use of retention where it may have adverse consequences.

Retention BMPs are not necessarily more effective than biofiltration BMPs as the Administrative Draft Permit implies, especially considering the back-to-back-to-back nature of storm systems that arrive in southern California during winter months and deliver the majority of total rainfall volume. The Administrative Draft Permit establishes a SWQDv that must be retained, but does not specify the time over which this volume must be drawn down (i.e., drained) in order to have capacity for the volume from subsequent storms. The rate at which the SWQDv can be drained is a function of the infiltration rates of soils and the demand for harvested water. Where soils are not sufficiently permeable and/or where harvested water demands are moderate to low, the drawdown time of retention BMPs can be in the range of several days to several weeks.

In comparison, biofiltration BMPs are designed with engineered soils that can generally drain the SWQDv much more quickly, on the order of several hours. In cases where retention opportunities are limited, this results in a higher level of capture and treatment by biofiltration BMPs than retention BMPs, which can more than offset the lower “treatment efficiency” afforded by biofiltration compared to full retention. For example, based on rigorous technical analysis contained in the Orange County Technical Guidance Document (Figure III.2, Page III-11), a hypothetical biofiltration BMP draining in 12 hours would achieve approximately 25 percent greater treatment of average annual stormwater runoff volume than an equivalently sized retention BMP that drains in 72 hours and approximately 60 percent greater treatment than a retention BMP that drains in 10 days.

Because drawdown time is an important factor in (i) assessing BMP effectiveness and (ii) evaluating the site-specific determination of whether retention or biofiltration are preferable, we strongly recommend (in addition to allowing the use of biofiltration or biotreatment systems to meet the retention standard) including a secondary performance metric of managing 80 percent of annual runoff volume using continuous simulation modeling. This provides a means of accounting for the performance of strictly on-site retention BMPs versus the addition of biofiltration or biotreatment BMPs which can be designed to manage a greater volume of average annual runoff volume than retention BMPs of the same size. The total amount of water captured and treated and associated pollutant load reduction should be a primary deciding factor in whether retention or biofiltration BMPs are selected for a given project. As written, the Administrative Draft Permit strongly discourages an entire group of effective practices which have the potential to provide better protection of water quality, when compared to retention, in a wide range of cases. Attachment 3 provides suggestions for permit language which corrects these deficiencies.

**3. Hydromodification control measures should allow use of the EP method to meet in stream standards; recognize multiple types of channel hardening when evaluating applications for hydromodification control exemptions**

In Attachment 3, we also make suggestions for improving the consistency of hydromodification control standards with those identified and allowed in the South Orange County MS4 permit. Specifically, we recommend providing for an in-stream hydromodification control performance standard using the erosion potential (EP) approach and recognizing that there are a number of different types of channel hardening that have been used for armoring in stream systems besides concrete.

The Administrative Draft Permit provides an “on-site” option for addressing hydromodification through flow duration control. This is an important element of the hydromodification control standard. However the Administrative Draft Permit is incomplete without an option to assess and demonstrate hydromodification control through in-stream metrics. In many cases, significant development within a watershed has already caused hydromodification impacts. Requiring project-by-project flow duration control for each new project may not address the existing issue as effectively as a regionally-coordinated approach that combines upland control with in-stream remedies. Including the EP standard enables the development of more comprehensive approaches that include both upland controls and stream modifications (i.e., restoration). This option is critical for more effectively and efficiently protecting the region’s aquatic resources.

Additionally, the Administrative Draft Permit includes an unnecessarily narrow definition of hardened channels that includes only those channels lined with concrete. Other forms of artificial hardening may be comparably resistant to hydromodification impacts, such as channels that are lined with rip rap, armored with soil cement, or armored with other practices. While the Permittees or the project proponent should be responsible for demonstrating that a specific channel material is sufficiently stable, the narrow definition currently provided by the Administrative Draft Permit does not allow the use of sound engineering judgment and does not allow for use of innovative materials.

Finally, the Administrative Draft Permit should explicitly recognize the findings of hydromodification management plans (HMPs) that have been previously approved by this Board. The South Orange County HMP and the San Diego County HMPs were both the products of rigorous technical analysis based on the state of the practice, which were reviewed in detail by Board Staff. The findings of these efforts must not be jeopardized under the new terms of the Administrative Draft Permit. Specifically, findings regarding exempt water bodies must be appreciated and upheld, and they should be explicitly recognized in the Administrative Draft Permit per our suggested redline.

**4. The Permit must preserve important provisions for watershed level design and implementation of LID BMPs.**

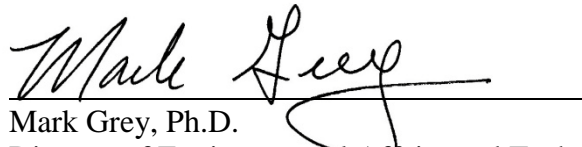
The proposed development project criteria and requirements in the Administrative Draft Permit do not include the language in the current South Orange County Permit that provides for Alternative Compliance for Watershed-Based Planning (See page 40-41 of the 2009 Permit). We ask that the Regional Board continue to recognize the protections to water quality and enhancements to water bodies which are achieved through watershed-based projects such as the Rancho Mission Viejo Ranch Plan, as it has in the current South County MS4 permit, and define Watershed Planning as an alternative and co-equal approach to the project-specific requirements. Attachment 3 to this submittal contains suggested redline language for addition to the Administrative Draft Permit.

**Concluding Remarks:**

BIA/SC and CICWQ have been active participants and contributors to the creation of improved MS4 permits across southern California. We continue to believe that rational, *implementable*, and *effective* permit requirements are critical to achieving great progress concerning water quality and our environment. We hope that these comments are received in the manner in which they are intended – to continue the discussion of how we can create a workable permit that improves water quality to the maximum extent practicable. We remain committed to a positive dialog with the Board and its staff – one that will result in an informed, balanced and effective permit.

If you have any questions or want to discuss the content of our comment letter, please feel free to contact me at (951) 781-7310, ext. 213, (909) 525-0623, cell phone, or [mgrey@biasc.org](mailto:mgrey@biasc.org).

Sincerely,

A handwritten signature in black ink, appearing to read "Mark Grey", is written over a horizontal line.

Mark Grey, Ph.D.  
Director of Environmental Affairs and Technical Director  
Building Industry Association of Southern California and  
Construction Industry Coalition on Water Quality