



Linda S. Adams  
Agency Secretary

# California Regional Water Quality Control Board

## Central Coast Region



Arnold Schwarzenegger  
Governor

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February 18, 2008

Honorable Assemblyman Sam Blakeslee  
1104 Palm Street  
San Luis Obispo, California 93401

Dear Mr. Blakeslee:

### **LOW IMPACT DEVELOPMENT AND CENTRAL COAST WATER BOARD STORMWATER REGULATIONS**

Thank you for meeting with us recently to discuss the Low Impact Development (LID) component of the Central Coast Water Board's stormwater regulations. We discussed the benefits of LID and hydromodification control and the flexibility and time the municipalities have to develop hydromodification control numeric criteria. You raised several questions and concerns and we agreed to follow up with this written response.

First, you emphasized to us the importance of infill and redevelopment, to prevent urban sprawl and meet the intent of Assembly Bill 375. You asked if our regulations could actually encourage urban sprawl because it may be easier to comply by siting projects on undeveloped land. We have a holistic approach to environmental protection and embrace AB 375. Controlling hydromodification through LID should not outweigh other important goals such as reducing greenhouse gas emissions. In fact, LID should help curb greenhouse gas emissions by maintaining local groundwater supplies and minimizing our dependence on energy-intensive imported water supplies. LID is a site design strategy that mimics the natural hydrologic cycle. It is independent of land use and lot size. LID practices have been used successfully in typical single-family suburban construction, dense urban applications, linear road projects, new development, and in retrofits. There are many examples of LID in urban, space-limited locations such as bioretention planters along sidewalks, green roofs on high-rise buildings, and cisterns that capture roof runoff for non-potable uses such as toilet flushing, decorative fountains, or landscape irrigation. With a little creativity, all sorts of solutions have been found to remedy the problem of excess runoff that comes from urban development. Most often, these solutions green the urban landscape and improve the livability and health of the community. In many cases, LID techniques have replaced the need for space intensive end-of-pipe controls, such as ponds.

As you know, we expect Central Coast municipalities to develop interim hydromodification control criteria in one year. Recognizing that controlling hydromodification is not feasible in all areas, we are providing municipalities with the opportunity to develop criteria by which projects will be subject to hydromodification control criteria. Several municipalities in the San Francisco Bay area have already developed such applicability criteria. For example, projects on sites that meet USEPA's Brownfields Sites definition, low income housing as defined in the Government Code, senior citizen housing developments as defined in the California Civil Code, and Transit-Oriented Development projects are not required to comply with local hydromodification control

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criteria, but are simply required to provide as much on-site stormwater treatment as possible, such as by diverting roof runoff to vegetated areas before discharge to the storm drain, installing landscaping-based stormwater treatment measures such as rain gardens, or installing prefabricated/proprietary stormwater treatment controls. Some Bay area municipalities provide exemptions from the hydromodification control standard for projects where stormwater discharges to existing storm drain systems are concrete-lined or significantly hardened downstream to San Francisco Bay, or for projects in “highly developed watersheds,” which are watersheds with 65% or more impervious cover. Closer to home, I recently approved the City of Morro Bay’s stormwater management program and its exclusion of projects in the Embarcadero area from interim hydromodification control criteria. That area drains directly to Morro Bay where there is no threat of hydromodification. I point out these examples to illustrate how applicability criteria provide a good opportunity for Central Coast municipalities to balance their various social, economic, and environmental goals with the need to control hydromodification.

We recognize that municipalities are influenced by State requirements for affordable housing as well as State mandates and policies affecting transportation infrastructure, greenhouse gas emissions, water supply, and public safety. For this reason, we have asked all local agencies subject to the Phase II stormwater regulations to engage in long-term watershed planning, to provide a context for weighing the multiple objectives affecting development.

The Highpoint Project in Seattle, Washington is an excellent example of the successful integration of LID, affordable housing, and infill/redevelopment objectives. In this project, the Seattle Public Utilities and the Seattle Housing Authority partnered to provide quality housing with a focus on a sustainable community (i.e., economically, environmentally, and socially sustainable). There are currently 829 housing units and when complete in 2009, will contain 1,600 units, all of which will meet or exceed Seattle’s Green Build Standards. The 120-acre site represents 10% of the Longfellow Creek Watershed and LID was a key component in the design. This site includes a 34-block LID system that protects the creek. Narrow streets and porous sidewalks reduce runoff, and rainwater flows into planted areas, where it is filtered by the soil before reaching the creek. The project also has a library, health clinics, a renovated community center, and a commercial center. Because of the use of green technologies to preserve resources, optimize density, and minimize environmental impact, the Highpoint Project has won numerous awards and been touted as an exemplary model for new urban communities. You can learn more about the Highpoint Project at <http://www.thehighpoint.com/pdf/IdeasHPArticle.pdf>.

You also asked about how we define “pre-development” conditions in redevelopment projects. We will consider applicability criteria, including baseline conditions defining “pre-development,” when the municipalities prepare their interim and long-term hydromodification criteria. We have thus far been flexible with the municipalities’ definition of pre-development conditions. I recently approved the City of Santa Maria’s methodology for developing interim hydromodification control criteria, including Santa Maria’s selection of *pre-construction* conditions as a baseline for hydrologic conditions in redevelopment projects.

You asked if our regulations might lead to expensive and complicated holding tanks with sophisticated release mechanisms. If a municipality develops appropriate applicability criteria and provides alternative compliance options, such systems should not be necessary.

Some groups are suggesting that LID is not compatible with Smart Growth. This impression likely stems from different interpretations of what constitutes Smart Growth. We subscribe to



the following “Hydrologic Philosophy of Smart Growth” by Richard McCuen.<sup>1</sup> This philosophy and its associated seven principles are consistent with the guiding principle of LID, which is to mimic natural hydrology.

Hydrologic Philosophy of Smart Growth:

*If society is to control urban sprawl, then guiding principles of smart growth are needed. These principles will form the basis for a philosophy of smart growth. Seven principles related to hydrologic aspects of smart growth include:*

*Principle 1: Control Runoff at Microwatershed Level*

*Principle 2: Consider Hydrologic Processes in Microwatershed Layout*

*Principle 3: Maintain First-Order Receiving Streams*

*Principle 4: Maintain Vegetated Buffer Zones*

*Principle 5: Control Spatial Pattern of Hydrologic Storage*

*Principle 6: Control Upland Flow Velocities*

*Principle 7: Control Temporal Characteristics of Runoff*

When communities are redeveloping in accordance with Smart Growth Objectives, LID is one of the tools that will enable them to do so in a manner that is compatible with the full suite of environmental objectives, as well as societal objectives such as environmental equity. Failure to do so will place good water quality and associated recreational objectives outside the reach and daily living experience of many communities. LID allows communities to redevelop existing infrastructure and sites with superior environmental and community design elements. Every site can include some degree of these elements. Some argue that these approaches are too expensive and are therefore detrimental to Smart Growth objectives of encouraging redevelopment. However, recent experience demonstrates the contrary to be true. Major cities such as Seattle, Portland, Philadelphia, New York City, Chicago, and Washington, D.C. are actively pursuing LID as a fundamental component of their recent efforts to make redevelopment green. Smart Growth and LID are not mutually exclusive, they are fully compatible and mutually supportive.

With respect to your question about the scientific basis for hydromodification control, a substantial body of scientific literature supports two related conclusions: first, urbanization causes hydrologic changes with ecological impacts, and second, management approaches targeting hydrologic processes (e.g., surface runoff, infiltration, storage and release) can prevent and mitigate those impacts. Beyond these well-supported conclusions, research continues to identify additional cause and effect relationships between human-induced hydrologic change and environmental effects and management strategies. I have attached a document we developed and distributed to Central Coast municipalities in July 2008, entitled, “An Example Approach for Including Quantitative Measures of Healthy Watersheds in Stormwater Management Programs.” This document includes 31 citations addressing the technical basis for stormwater management strategies, including hydromodification control.

We acknowledge that no stormwater management strategy, or suite of approaches, can achieve full hydrologic mitigation for the impacts of urbanization. We recognize the challenges of applying LID in certain circumstances, but we nonetheless consider LID to represent the most comprehensive effort at mitigating the hydrologic impacts of urbanization.

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<sup>1</sup> For further explanation refer to: Richard H. McCuen, *Smart Growth: Hydrologic Perspective*, *Journal of Professional Issues in Engineering, Education and Practice*, Vol. 129, No. 3, July 1, 2003. ©ASCE, ISSN 1052-3928/2003/3-151–154.



You asked if there may be situations where off-site mitigation makes more sense or may be less costly. We need to research this further. The purpose of LID is to mimic natural hydrology at the site level, so offsite mitigation would contravene LID. However, we recognize LID may not be feasible at certain sites, so offsite mitigation may be the best alternative for watershed health. Successful offsite mitigation requires good watershed information and careful analysis, which most cities and local agencies don't yet have. We expect Central Coast cities and local agencies will consider offsite mitigation when they engage in long term watershed planning.

Finally, I'd like to clarify that our stormwater regulations do not require more of smaller Phase II municipalities than of large Phase I municipalities. We have tasked the Phase II municipalities with implementing interim criteria before developing long-term criteria, to allow them time to work through the hurdles of implementing hydromodification controls and set the stage for well-formulated long-term controls. Interim criteria will be in effect no sooner than early 2010 for Phase II communities. For the City of Salinas, the Central Coast Region's only Phase I community, the Water Board adopted a permit in 2005, which required Salinas to have hydromodification controls in place by 2007, well in advance of interim requirements for the Phase II communities. In other regions of the State, hydromodification controls are in effect for most Phase I municipalities, including counties with smaller, rural municipalities.

We have a Vision of Healthy Watersheds for the Central Coast Region, accomplished through attainment of our goals of sustainable land use, clean groundwater, and healthy aquatic habitat. Low Impact Development is key to reaching all of these goals and is an integral component of Smart Growth that prevents urban sprawl and helps to reduce greenhouse gas emissions. I hope this letter addresses your questions. If you would like to discuss Low Impact Development further, please do not hesitate to call me at 549-3140.

Sincerely,

/s/

Roger W. Briggs  
Executive Officer

Attachment:

July 2008 "An Example Approach for Including Quantitative Measures of Healthy Watersheds in Stormwater Management Programs."

c: Regional Water Board Members

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