

May 8, 2009

By E-mail and U.S. Mail

Gerard Thibeault  
Executive Officer  
California Regional Water Quality Control Board, Santa Ana Region  
3737 Main Street, Suite 500  
Riverside, CA 92501-3348

**Subject: Comment Letter, Tentative Order No. R8-2009-0030 NPDES No. CAS618030**

  
Dear Mr. Thibeault.

At the April 24, 2009 public hearing, the Santa Ana Regional Board held open the comment period on several land development provisions of the tentative order before it – *Waste Discharge Requirements for the County of Orange, Orange County Flood Control District and the Incorporated Cities of Orange County Within the Santa Ana Region Areawide Urban Storm Water Runoff Orange County* (Order No. R8-2009-0030). Specifically, the Board agreed to accept comments on Sections XII.C.1 and C.2, which had been revised the day of the hearing. We understand the Board intends to adopt the order at the May 22, 2009 public hearing.

The County of Orange, the Principal Permittee, is disappointed that last minute changes introduced at the hearing and subsequent to the hearing in the form of the fourth draft of the Order create a permit significantly different from the one the County came to the April 24th hearing ready to support. Nonetheless, the County welcomes the opportunity to provide additional comments on these key provisions. The Permittees were involved in the development of these comments and the cities of Anaheim, Buena Park, Cypress, Fountain Valley, Irvine, La Palma, Laguna Hills, Lake Forest, Newport Beach, Orange, Placentia, Tustin, Villa Park and Westminster have directed that they be recognized as concurring entities.

Sections XII.C.1 and C.2 pertain to land development and, specifically, “low impact development” or “LID.” Prior to the April 24<sup>th</sup> hearing, the Order’s land development provisions had been the subject of a series of stakeholder meetings. In our letter of February 13, 2009, we highlighted this series of meetings and noted that they had produced general areas of agreement, which include:

1. Performance standards for implementing LID BMPs, other than an EIA percentage (3-5%) are acceptable if a technically equivalent standard can be identified.
2. Sizing LID BMPs to capture the 85th percentile storm event (current DAMP criteria for water quality volume) is an acceptable alternative to EIA as a performance standard

provided that technically-based, strict, and clear feasibility criteria are developed for any project that cannot meet the LID BMP requirements.

3. Prioritized LID/SUSMP BMPs for water quality volume capture are represented by: a) infiltration BMPs; b) harvesting and reuse BMPs; and c) vegetated (or evapotranspiration) BMPs, including bioretention and biofiltration. Water quality volume not captured by LID BMPs shall be treated consistent with DAMP requirements.

Additionally, the County of Orange endorsed these general areas of agreement as “default” requirements pending development of watershed based standards through a watershed master plan (Section XII.D.5). In fact, we specifically agreed to enhanced watershed master planning requirements as part of this integrated approach.

These general areas of agreement were by and large reflected in the third draft of the Order. It is the County’s position that they should continue to inform the framework of the Order’s land development provisions. The changes made in the fourth draft of the Order, while deceptively small, will fundamentally alter this framework.

**Attachment A** presents a visual representation of the framework for land development that essentially reflects the land development provisions of the third draft of the Order. It predicates compliance on management of the 85<sup>th</sup> percentile storm volume; presumes the application of LID BMPs based upon a prioritized consideration of infiltration; capture and re-use, evapotranspiration, and bio-retention/bio-filtration and requires treatment of any residual runoff volumes for which the application of LID BMPs has been determined to be infeasible at site, sub-regional and regional scales. This framework also integrates options for water quality credits and provides for alternate compliance approaches including participation in a watershed project and contributions to an “in-lieu” fund. It also explicitly recognizes bioretention/biofiltration BMPs as LID BMPs and the continued and entirely legitimate contribution of effective structural BMPs such as constructed wetlands and detention ponds to the practice of stormwater quality management. The County’s specific comments and suggestions regarding Sections XII.C.1., and X.II.C.2. which are presented below, support this framework.

#### Specific Comments on Sections XII.C.1 and C.2

At the April 24th hearing, the representative from U.S. EPA stated that the changes to Sections XII.C.1 and C.2 were made at EPA’s request. The County understands that Section XII.C.1. was revised to address U.S. EPA’s concern regarding the possibility of inordinate delay in Executive Officer approval of the required criteria for determining LID feasibility. The U.S. EPA revision removes reference to the application of the feasibility criteria. The consequence of removing the feasibility criteria is that each priority development project will need to provide the Executive Officer with project specific criteria as part of any feasibility analysis. This could subsequently result in administrative burden, additional costs and staff time as well as potential project delays. In **Attachment B** we have included proposed redline language for Section XII.C.1, making as few changes as possible, that clarifies this procedure and relates it to the update of the model WQMP.

It is less clear why U.S. EPA requested the change to Section XII.C.2. The effect of the change, however, does appear clear. It would fundamentally alter the framework discussed above. Specifically, the prioritization principle outlined in the third bullet point above would be eviscerated. As revised by U.S. EPA, any priority development project that could not meet the

performance goal by using the identified LID BMPs would have to obtain a waiver from the Executive Officer.<sup>1</sup> There would be no prioritization nor use of any other BMPs—LID or otherwise—without Executive Officer approval. It is not clear what effect U.S. EPA's revision would have on the BMP requirements of Section XII.B which is predicated on the use of all effective BMPs, including LID BMPs and others.

At the April 24th hearing, you and your staff agreed to add "biotreatment" to the identified LID BMPs that could be used to meet the performance goal in section XII.C.2. The Board supported this change. However, this change is not reflected in the fourth draft of the Order. While the term "bio-filter" has been added to the identified LID BMPs, a new footnote provides that bio-filtration, bio-retention or bio-treatment only may be used if other identified LID BMPs (infiltration, harvest and reuse, and evapotranspiration) are not feasible. This additional qualification is not what the Board supported at the April 24th hearing. Alternate revised language for Section X.II.C.2 is also presented in **Attachment B**. Again, making as few changes as possible, this language restores the feasibility criteria to the framework and otherwise attempts to address the County's concerns.

The new footnote, as well as U.S. EPA's other changes to Section XII.C.2, highlight a significant problem with the approach the Order has taken. Instead of allowing permittees the discretion to use whatever means they determine are effective to meet the substantive requirements of the Order, the fourth draft dictates that permittees use not just LID BMPs to meet the requirements, but a pre-selected subset of LID BMPs. That is a clear violation of section 13360(a) of the Water Code which prohibits Regional Boards from prescribing the manner in which a permittee is to comply with a permit. Eric Strecker of Geosyntec, an expert in the field, provided testimony on April 24, 2009 that this requirement is not technically sound.

Finally, your attention is drawn to a preliminary analysis of fiscal impact prepared by the City of Simi Valley with respect to the application of LID requirements to a 5.23 acre affordable housing project. This analysis provides preliminary information on the potentially significant cost impacts of retaining stormwater on site, and is included in **Attachment C**. It should be noted that a similar analysis is not available at this time for north Orange County.

Thank you for your attention to our comments. Please contact Richard Boon at (714) 955-0670 or Chris Crompton at (714) 955-0630 with any questions on this matter.

Sincerely,



Mary Anne Skorpanich  
Director, OC Watersheds Program

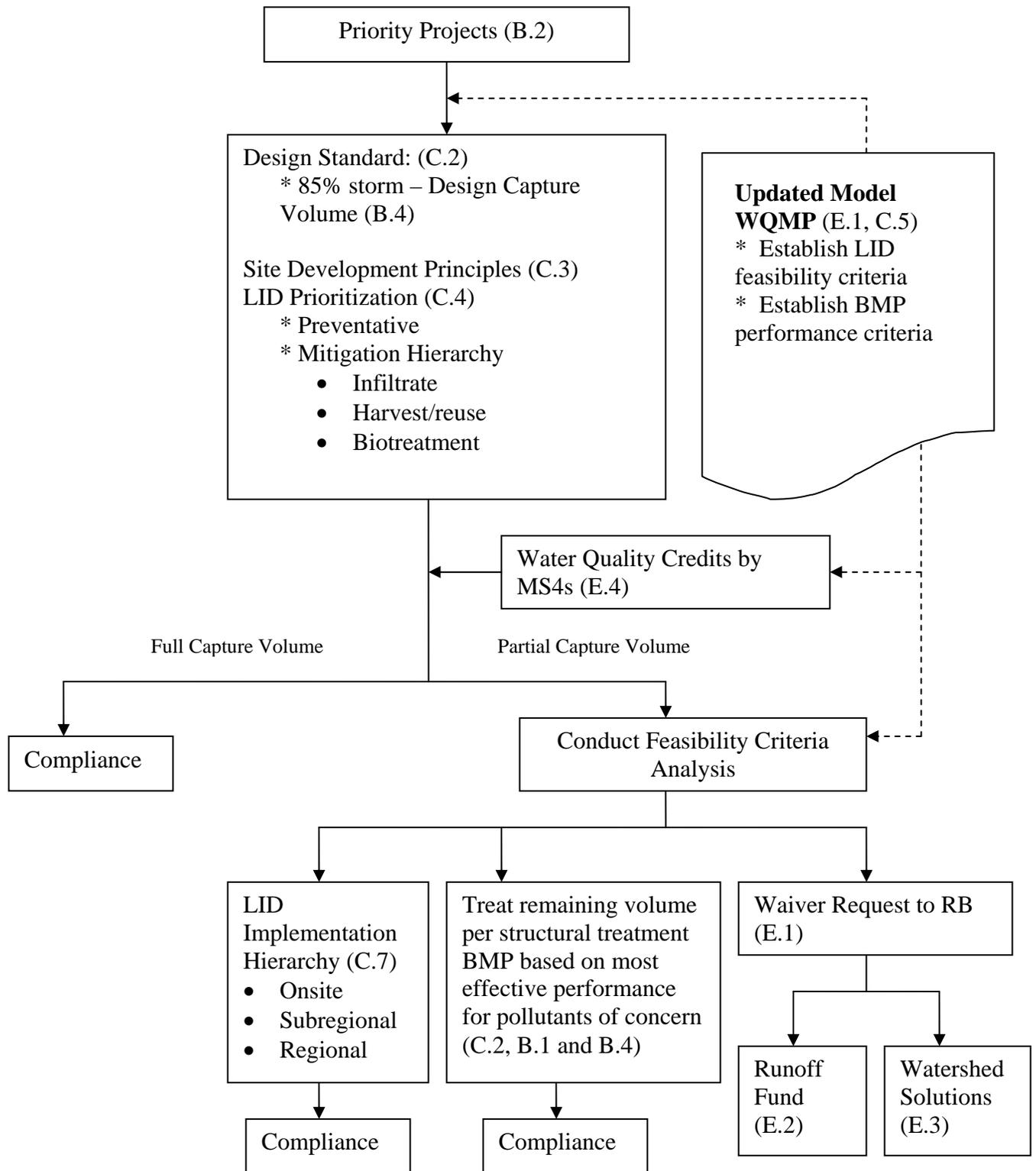
cc: Board Members  
City Permittees

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<sup>1</sup> During recent discussions with U.S. EPA and your staff on this issue there seemed to be some misunderstanding as to the conditions under which waivers would be required.

Attachment A: Process Flow Chart  
Attachment B: Alternate Revised Language  
Attachment C: Letter of May 6, 2009 from City of Simi Valley to Building Industry Association – Preliminary Analysis of the Fiscal Impact to new Development by the Requirements of the Tentative Order of the Ventura County MS4 Permit

# Attachment A: LID Process



ATTACHMENT B - REGULATED COMMUNITY  
PROPOSAL (May 7, 2009)

Order No. R8-2009-0030 (NPDES No. CAS 618030)

53 of 93

The County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County  
Areawide Urban Storm Water Runoff

NOTE: RB changes from Third to Fourth Draft in blue. Regulated community changes to Fourth Draft in red.

**C. LOW IMPACT DEVELOPMENT TO CONTROL POLLUTANTS IN URBAN RUNOFF FROM NEW DEVELOPMENT/SIGNIFICANT REDEVELOPMENT:**

1. Within 12 months of adoption of this order, the permittees shall update the **model** WQMP to incorporate LID principles (as per Section XII.C) and to address the impact of urbanization on downstream hydrology (as per Section XII.D) and a copy of the updated WQMP shall be submitted for review and approval by the Executive Officer<sup>55</sup>. As provided in Section XII.J, 90 days after approval of the revised model WQMP, pPriority development projects that meet the feasibility criteria established pursuant to Section XII.E shall implement the LID principles described in this section, Section XII.C. To the extent the Executive Officer has not approved feasibility criteria as provided in Section XII.E.1, the infeasibility of implementing LID BMPs shall be determined through a project-specific analysis submitted to the Executive Officer for approval.
2. The permittees shall reflect in the WQMP and otherwise require that each priority development project infiltrate, harvest and re-use, evapotranspire, ~~or capture, or bio-filter~~treat<sup>56</sup> the 85<sup>th</sup> percentile storm event (“design capture volume”), as specified in Section XII.B.4.A.1, above. ~~Projects that do not comply with this requirement shall meet the requirements established in section XII.E. for alternative or in-lieu compliance.~~ Any portion of ~~this the design capture~~ volume that is not infiltrated, harvested and re-used, evapotranspired, ~~or captured~~ or bio-filtered<sup>57</sup> onsite by LID BMPs shall be treated and discharged using LID or ~~conventional~~ similarly effective treatment control BMPs or mitigated as set forth in Section XII.C.7, below. Projects that do not comply with this requirement shall meet the requirements established in Section XII.E. for alternative or in-lieu compliance.
3. The permittees shall incorporate LID site design principles to reduce runoff to a level consistent with the maximum extent practicable standard during each phase of priority development projects. The permittees shall require that each priority development project include site design BMPs during development of the preliminary and final WQMPs. The design ~~strategy~~goal shall be to maintain or replicate the pre-development hydrologic regime through the use of design techniques that create a functionally equivalent post-development hydrologic regime through site preservation techniques and the use of integrated and distributed micro-scale storm water infiltration, retention, detention,

<sup>55</sup> The Executive Officer shall provide members of the public with notice and at least a 30-day comment opportunity for all documents submitted in accordance with this order. If the Executive Officer, after considering timely submitted comments, concludes that the document is adequate or adequate with specified changes, the Executive Officer may approve the document or present it to the Board for its consideration at a regularly scheduled and noticed meeting.

<sup>56</sup> A properly engineered and maintained bio-filtration, bio-retention or other bio-treatment systems may be considered only ~~if infiltration, harvesting and reuse and evapotranspiration are not feasible in~~ accordance with the priorities specified in Section XII.C.4.

<sup>57</sup> A properly engineered and maintained bio-filtration, bio-retention or other bio-treatment systems may be considered only ~~if infiltration, harvesting and reuse and evapotranspiration are not feasible in~~ accordance with the priorities specified in Section XII.C.4.

evapotranspiration, filtration and treatment systems as close as feasible to the source of runoff. Site design considerations shall include, but not be limited to:

- a. Limit disturbance of natural water bodies and drainage systems; conserve natural areas; preserve trees; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies;
  - b. Minimize changes in hydrology and pollutant loading; require incorporation of controls, including structural and non-structural BMPs, to mitigate the projected increases in pollutant loads and flows; ensure that post-development runoff durations and volumes from a site have no significant adverse impact on downstream erosion and stream habitat; minimize the quantity of storm water directed to impermeable surfaces and the MS4s; minimize paving, minimize runoff by disconnecting roof leader and other impervious areas and directing the runoff to pervious and/or landscaped areas, minimize directly connected impervious areas; design impervious areas to drain to pervious areas; consider construction of parking lots, walkways, etc., with permeable materials; minimize pipes, culverts and engineered systems for storm water conveyance thereby minimizing changes to time of concentration on site; utilize rain barrels and cisterns to collect and re-use rainwater; maximize the use of rain gardens and sidewalk storage; and maximize the percentage of permeable surfaces distributed throughout the site's landscape to allow more percolation of storm water into the ground;
  - c. Preserve wetlands, riparian corridors, vegetated buffer zones and establish reasonable limits on the clearing of vegetation from the project site;
  - d. Use properly designed and well maintained water quality wetlands, bio-retention areas, filter strips and bio-filtration swales; consider replacing curbs gutters and conventional storm water conveyance systems with biotreatment systems, where such measures are likely to be effective and technically and economically feasible;
  - e. Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site;
  - f. Establish development guidelines for areas particularly susceptible to erosion and sediment loss;
  - g. Implement effective education programs to educate property owners to use pollution prevention measures and to maintain on-site hydrologically functional landscape controls; and
  - h. During the early planning stages of a project, the LID principles shall be considered to address pollutants of concern identified in the Watershed Action Plans and TMDL Implementation Plans, and the LID BMPs shall be incorporated into the sites conceptual WQMP.
4. The selection of LID principles shall be prioritized in the following manner (from highest to the lowest priority): (1) Preventative measures (these are mostly non-

structural measures, e.g., preservation of natural features to a level consistent with the maximum extent practicable standard; minimization of runoff through clustering, reducing impervious areas, etc.) and (2) Mitigation (these are structural measures, such as, infiltration, harvesting and reuse, bio-treatment, etc. The mitigation or structural site design BMPs shall also be prioritized (from highest to lowest priority): (1) Infiltration (examples include permeable pavement with infiltration beds, dry wells, infiltration trenches, surface and sub-surface infiltration basins. All infiltration activities should be coordinated with the groundwater management agencies, such as the Orange County Water District); (2) Harvesting and Re-use (e.g., cisterns and rain barrels); and (3) Bio-treatment such as bio-filtration/bio-retention.

5. Even though the LID principles are universally applicable, there could be constraining factors, such as: soil conditions, including soil compaction, saturation (e.g., hydric soils) and permeability, groundwater levels, soil contaminants (Brownfield developments), space restrictions (in-fill projects, redevelopment projects, high density development, transit-oriented developments), naturally occurring contaminants (e.g., selenium in the soil and the groundwater in the Newport Bay Watershed), etc. In such cases, the LID principles could be integrated into other programs, such as: Smart Growth<sup>58</sup>, New Urbanism<sup>59</sup> or regional or sub-watershed management approaches. Also see Section E, below, for alternatives and in-lieu programs.
6. The LID BMPs shall be designed to mimic pre-development site hydrology through technically and economically feasible preventive and mitigative site design techniques. LID combines hydrologically functional site design with pollution prevention methods to compensate for land development impact on hydrology and water quality.
7. If site conditions do not permit infiltration, harvesting and re-use, and/or evapotranspiration, capture, and/or biotreatment of the design capture volume at the project site as close to the source as possible, the alternatives discussed below should be considered and the credits and in-lieu programs discussed under Section E, below, may be considered:
  - a. Implement LID principles at the project site. This is the preferred approach. For example, in a single family residential development: connect roof drains to a landscaped area, divert driveway runoff to a vegetated strip and minimize any excess runoff generated from the development. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, and/or harvest and re-use, evapotranspire, capture, or treat at least the design capture volume.

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<sup>58</sup> Smart Growth refers to the use of creative strategies to develop ways that preserve natural lands and critical environmental areas, protect water and air quality, and reuse already-developed land.

<sup>59</sup> New Urbanism is somewhat similar to Smart Growth and is based on principles of planning and architecture that work together to create human-scale, walkable communities that preserve natural resources.

- b. Implement as many LID principles as possible at the project site close to the point of storm water generation and infiltrate, ~~and/or~~ harvest and re-use, evapotranspire, capture, or biotreat at least the design capture volume through designated ~~infiltration/treatment~~ areas elsewhere within the project site. For example, at a condominium development: connect the roof drains to landscaped areas, construct common parking areas with pervious asphalt with a sub-base of rocks or other materials to facilitate percolation of storm water, direct road runoff to curbsless, vegetated sidewalks. The pervious areas which receive runoff from impervious areas should have the capacity to infiltrate, harvest and re-use, evapotranspire, capture, or treat at least the design capture volume.
- c. Implement LID on a sub-regional basis. For example, at a 100 unit high density housing unit with a small strip mall and a school: connect all roof drains to vegetated areas (if there are any vegetated areas, otherwise storm water storage and reuse may be considered or else divert to the local storm water conveyance system, to be conveyed to the local treatment system), construct a storm water infiltration gallery below the school playground to infiltrate and/or harvest and re-use the design capture volume. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, harvest and re-use, evapotranspire, capture, or treat at least the design capture volume. (Also see discussion on hydrologic conditions of concern, below.)
- d. Implement LID on a regional basis. For example, several developments could propose a regional system to address storm water runoff from all the participating developments. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, harvest and re-use, evapotranspire, capture, or treat at least the design capture volume from the entire tributary area. (Also see discussion on hydrologic conditions of concern, below.)



# CITY OF SIMI VALLEY

*Home of The Ronald Reagan Presidential Library*

May 6, 2009

Holly Schroeder  
Chief Executive Officer  
Building Industry Association - LA/Ventura Chapter  
28460 Avenue Stanford, Suite 110  
Santa Clarita, CA 91355

**SUBJECT: PRELIMINARY ANALYSIS OF THE FISCAL IMPACT TO NEW DEVELOPMENT BY THE REQUIREMENTS OF THE TENTATIVE ORDER OF THE VENTURA COUNTY MUNICIPAL SEPARATE STORM SEWER SYSTEM PERMIT DATED FEBRUARY 24, 2009**

Dear Ms. Schroeder:

As we discussed, the City of Simi Valley has performed a preliminary analysis of the fiscal impact to new development as a result of the requirements of the Tentative Order of the Ventura County Municipal Separate Storm Sewer System Permit (MS4). The analysis also included consideration of the mutual agreement between Heal the Bay (HTB), the Natural Resources Defense Council (NRDC), and the Co-Permittees. In reviewing the language of the mutual agreement, City staff indicated two possible interpretations of the agreement concerning whether or not water from pervious surfaces is allowed to leave the site.

Staff performed a hypothetical analysis based upon an actual affordable housing project constructed in the City of Simi Valley. The project was constructed by Cabrillo Development Company approximately five years ago and is located on Alamo Street between Tapo Canyon Road and Tapo Street. It included 70 units, having 34 units designated affordable, on a 5.23-acre site (227,818 sq ft) and originally costing \$12,738,000 with an affordable housing subsidy of \$36,300 per unit. The findings are summarized below with a more detailed summary and explanation of the analysis provided in Attachment 1.

In summary, the analysis estimated that each alternative would have increased development costs as follows.

1. Tentative Order (4th Draft) issued February 24, 2009 would have increased developer costs by \$570,900 or 4.48%. The affordable housing subsidy would increase by \$16,791 to \$53,091.
2. Mutual agreement between HTB, NRDC, and Co-Permittees (surface water allowed to leave the site from pervious surfaces) would have increased costs by \$664,000 or 5.21%. The affordable housing subsidy would increase by \$19,524 to \$55,824.

3. Mutual agreement between HTB, NRDC, and Co-Permittees (no surface water allowed to leave the site) would have increased costs by \$1,029,000 or 8.08%. The affordable housing subsidy would increase by \$30,258 to \$66,558.

As can be seen, the estimated additional cost of implementing the revised draft of the permit and the variations of the mutual agreement on a project with an affordable component ranged from 4.5% to 8%, or in this application to a real project a cost differential ranging from \$570,900 to \$1,029,000.

Should conditions become unfavorable to retain and infiltrate, it is possible that these costs could easily double this amount and thus exceed 20% of the developer's cost to construct with subsequent increases to the affordable elements.

It is important to remember that lacking a technical guidance manual and specific volume criteria and BMP sizing guidance that these numbers can only be interpreted as preliminary in nature but should still provide a good example for further discussion on the subject.

Thank you for your time. If you have any questions, please call me at 805-583-6701.

Sincerely,



Mike Sedell  
City Manager

cc: City Council  
City Attorney  
Sam Unger, Los Angeles Regional Water Quality Control Board  
Ventura County Co-Permittees  
Natural Resources Defense Council  
Heal the Bay

**PRELIMINARY ANALYSIS OF THE FISCAL IMPACT TO NEW DEVELOPMENT BY THE REQUIREMENTS OF THE TENTATIVE ORDER OF THE VENTURA COUNTY MUNICIPAL SEPARATE STORM SEWER SYSTEM PERMIT DATED FEBRUARY 24, 2009**

**Case 1:**

Site with excellent soils conditions under design requirements of current permit language allowing surface filtration methodology. In this situation, it should be noted that a certain degree of infiltration technology could also be substituted for a portion of the project area for a nominal cost increase.

Itemization of Costs:

1. Onsite bio-filtration, 154,360 sq ft of site (all of building, and a majority of concrete and asphalt areas) @ \$2.50 per sq ft of cost for treatment devices such as bio-swales, modified landscaping, etc. **\$385,900**
2. Modified landscaping meeting current design methodology implied by permit with some potential for bio-filtration, storage, runoff and limited infiltration. 73,458 sq ft @ \$2.50 per sq ft. **\$185,000**

**Total cost for a primary bio-filtration scenario under current permit - \$570,900 or 4.48% of project cost.**

**Case 2:**

Site having excellent to low to moderate soils problems with some clay near upper layers, but overall good infiltration (sand and coarse sand) in lower zones below 10 - 15 feet in depth. Infiltration by darcy dry wells and modified landscaping appropriate. No onsite bio-filtration necessary to comply with agreement language.

Itemization of Costs:

1. Onsite infiltration for via darcy dry wells and limited infiltration trenches as necessary depending onsite conditions. 118,000 sq ft of building rooftop and impervious surfaces not converted to impermeable surfaces. (Note: only impervious surfaces, rooftops and high travel drive asphalt areas and concrete curb and gutter not converted to impermeable surfaces were included in this calculation). Requires installing two darcy wells with associated piping and limited infiltration trenches with grading and site modifications. **\$170,000**

2. Convert 34,363 sq ft of impermeable concrete and asphalt paving to permeable surface at onset. Additional cost of paving materials with associated ground preparation for porous media meeting the storage, infiltration and evapotranspiration requirements of such improvements. 34, 363 sq ft @ \$9.00 per sq ft. **\$309,000**
3. Modified landscaping meeting current draft design methodology and criteria. 73,459 sq ft @ 2.50 per sq ft. **\$185,000**

**Total cost for a primary retention scenario - \$664,000 or 5.21% of project cost.**

### Case 3:

Site with very significant soils problems having clay or high groundwater to interfere with retention and infiltration.

#### Itemization of Costs:

1. Cistern and distribution system for 22 buildings having 67,575 sq ft of roof.  
**\$220,000**
2. Porous asphalt concrete and concrete per item 2 of Scenario 2 above for 34,363 sq ft.  
**\$309,000**
3. Modified landscaping. **\$185,000**
4. Treat remaining 18% unconverted impervious area by increasing ability of all existing landscape for added treatment and increased shallow depth storage to store and effectively treat accept this added water. 125,880 sq ft @ \$2.50 per sq ft.  
**\$315,000**

**Total cost for a primary retention scenario - \$1,029,000 or 8.08% of project cost.**

### Additional Considerations:

Impact of added BMP's (under the mutual agreement) to mitigate an extremely adverse conditions for this site could likely double above costs (\$1,330,000 ideal case and \$2,058,000 non-ideal case-adverse soils conditions). This is an approximation. A detailed analysis was not done to arrive at this approximation. If this scenario occurs it may be more cost effective to provide offsite mitigation.