Regional Board Meeting
January 24, 2007

Item 11

Supplemental Executive Officer Summary Report
Supporting Document # 4

Additional Written Comments

January 24, 2007 Regional Board Meeting
Item 11
Supplemental Executive Officer Summary Report, Supporting Document#4

Written Comments from Copermittees and Interested Parties

A. San Diego Copermittees (submitted by County of San Diego)

B. Natural Resources Defense Council

January 24, 2007 Regional Board Meeting
Item 11
Supplemental Executive Officer Summary Report, Supporting Document # 4

A. San Diego Copermittees

From: "VanRhyn, Jon" <Jon.VanRhyn@sdcounty.ca.gov>
To: "Phil Hammer" <PHammer@waterboards.ca.gov>
Date: 1/16/2007 11:31:09 AM
Subject: Detailed Copermittee Comments on Tentative Order No. R9-2006-0011

Phil. I'm attaching a track changes version of the Copermittees' comments on the Development Planning section of the Tentative Order. As we discussed, there may be instances where changes are not completely tracked because I haven't had time to go through and compare the versions carefully. There may also be a couple of instances where we've tracked changes on top of our own previous changes. These should all hopefully be obvious to you. I won't go into a detailed rationale here for our overall Model SUSMP update approach since I think you know that pretty well from our January 2 letter and subsequent our discussion. Most, if not all, major changes are accompanied by inserted comments, but please call if you have questions.

A couple of issues are worth pointing out.

* We didn't modify any language regarding the applicability of the numeric sizing criteria because our understanding is that it applies only to the runoff generated. That is, even after a higher level of site design / source control BMP application, the 85th percentile will apply to the treatment of the remaining runoff. I think that's also your understanding, but it's possible that the Order might need to be a little clearer on that point.

* We included what we think is a flexible requirement for RWQCB review and approval of the Model SUSMP Update. Hopefully, this provides a reasonable balance between your concerns and those of the Copermittees. Establishing some certainty here is crucial to our overall support of a model approach.

* As previously stated in our January 2 letter, we believe that accompanying minor modifications are also needed in the education and reporting sections, but we haven't had time to make them. We can discuss those if you have questions.

Thanks again for taking the time to consider our comments. Jon.
858-495-5133

FINDINGS

2. Development Planning

b. Controlling urban runoff pollution through Low Impact Development (LID) practices ~~by using~~ that utilize a combination of onsite source control and ~~Low Impact Development (LID)~~ site design BMPs augmented with treatment control BMPs before the runoff enters the MS4 is important for the following reasons: (1) Many end-of-pipe BMPs (such as diversion to the sanitary sewer) are typically ineffective during significant storm events. Whereas, onsite source control BMPs can be applied during all runoff conditions; (2) End-of-pipe BMPs are often incapable of capturing and treating the wide range of pollutants which can be generated on a sub-watershed scale; (3) End-of-pipe BMPs are more effective when used as polishing BMPs, rather than the sole BMP to be implemented; (4) End-of-pipe BMPs do not protect the quality or beneficial uses of receiving waters between the source and the BMP; and (5) Offsite end-of-pipe BMPs do not aid in the effort to educate the public regarding sources of pollution and their prevention.

Comment [JV1]: Since "LID" encompasses an array of site design, source control, and treatment control BMPs, it should not be narrowly construed as a modifier for site design BMPs only. This comment is applicable in numerous other instances where the term has been added as an adjective to site design BMPs.

c. Use of ~~LID~~ site design BMPs at new development projects can be an effective means for minimizing the impact of urban runoff discharges from the development projects on receiving waters. LID ~~Ssite design BMPspractices~~ help preserve and restore the natural hydrologic cycle of the site, allowing for filtration and infiltration which can greatly reduce the volume, peak flow rate, velocity, and pollutant loads of urban runoff.

Comment [JV2]: See comment 1.

d. Retail Gasoline Outlets (RGOs) are significant sources of pollutants in urban runoff. RGOs are points of convergence for motor vehicles for automotive related services such as repair, refueling, tire inflation, and radiator fill-up and consequently produce significantly higher loadings of hydrocarbons and trace metals (including copper and zinc) than other urban areas. To meet MEP, ~~LID~~ site design, source control, and treatment control BMPs are needed at RGOs that meet the following criteria: (a) 5,000 square feet or more, or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day. These are appropriate thresholds since vehicular development size and volume of traffic are good indicators of potential impacts of urban runoff from RGOs on receiving waters.

Comment [JV3]: See comment 1.

e. Heavy industrial sites are significant sources of pollutants in urban runoff. Pollutant concentrations and loads in runoff from industrial sites are similar or exceed pollutant concentrations and loads in runoff from other land uses, such as commercial or residential land uses. As with other land uses, ~~LID~~ site design, source control, and treatment control BMPs are needed at heavy industrial sites in order to meet the MEP standard. These BMPs are necessary where the heavy industrial site is larger than one acre. The one acre threshold is appropriate, since it is consistent with requirements in the Phase II NPDES storm water regulations.

Comment [JV4]: See comment 1.

f. If not properly designed or maintained, certain BMPs implemented or required by municipalities for urban runoff management may create a habitat for vectors (e.g. mosquitoes and rodents). However, proper BMP design of permanent water retaining BMPs that includes vector control standards ~~to avoid standing water~~ can prevent the creation of vector habitat. Nuisances and public health impacts resulting from vector breeding can be prevented with close collaboration and cooperative effort between municipalities and local vector control agencies and the State Department of Health Services during the development and implementation of urban runoff management programs.

Comment [JV5]: An all-out avoidance of standing water should not be the intent of properly designing BMPs. Modification focuses on avoidance of vector control issues instead.

PERMIT PROVISIONS

D. JURISDICTIONAL URBAN RUNOFF MANAGEMENT PROGRAM

Each Copermittee shall implement all requirements of section D of this Order no later than 365 days after adoption of the Order, unless otherwise specified in this Order. Prior to 365 days after adoption of the Order, each Copermittee shall at a minimum implement its Jurisdictional URMP document, as the document was developed and amended to comply with the requirements of Order No. 2001-01. Each Copermittee shall develop and implement an updated Jurisdictional Urban Runoff Management Program for its jurisdiction. Each updated Jurisdictional Urban Runoff Management Program shall meet the requirements of section D of this Order, reduce the discharge of pollutants from the MS4 to the MEP, and prevent urban runoff discharges from the MS4 from causing or contributing to a violation of water quality standards.

1. Development Planning Component

Each Copermittee shall implement a program which meets the requirements of this section and (1) reduces Development Project discharges of pollutants from the MS4 to the MEP, (2) prevents Development Project discharges from the MS4 from causing or contributing to a violation of water quality standards, and (3) manages increases in runoff discharge rates and durations from Development Projects that are likely to cause increased erosion of stream beds and banks, silt pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

a. GENERAL PLAN

Each Copermittee shall revise as needed its General Plan or equivalent plan (e.g., Comprehensive, Master, or Community Plan) for the purpose of providing effective water quality and watershed protection principles and policies that direct land-use decisions and require implementation of consistent water quality protection measures for Development Projects.

b. ENVIRONMENTAL REVIEW PROCESS

Each Copermittee shall revise as needed their current environmental review processes to accurately evaluate water quality impacts and cumulative impacts and identify appropriate measures to avoid, minimize and mitigate those impacts for all Development Projects.

c. APPROVAL PROCESS CRITERIA AND REQUIREMENTS FOR ALL DEVELOPMENT PROJECTS

For all proposed Development Projects, each Copermittee during the planning process and prior to project approval and issuance of local permits shall prescribe the necessary requirements so that Development Project discharges of pollutants from the MS4 will be reduced to the MEP, will not cause or contribute to a violation of water quality standards, and will comply with Copermittee's ordinances, permits, plans, and requirements, and with this Order. The requirements shall include, but not be limited to, implementation by the project proponent of the following:

(1) Source control BMPs that reduce storm water pollutants of concern in urban runoff, including storm drain system stenciling and signage, properly designed outdoor material

storage areas, properly designed trash storage areas, and implementation of efficient irrigation systems;

(2) ~~LID sSi~~Site design BMPs where feasible which maximize infiltration, provide retention, slow runoff, minimize impervious footprint, direct runoff from impervious areas into landscaping, and construct impervious surfaces to minimum widths necessary;

Comment [JV6]: See comment 1.

(3) Buffer zones for natural water bodies, where feasible. Where buffer zones are infeasible, require project proponent to implement other buffers such as trees, access restrictions, etc., where feasible;

(4) Measures necessary so that grading or other construction activities meet the provisions specified in section D.2 of this Order; and

(5) Submittal of proof of a mechanism under which ongoing long-term maintenance of all structural post-construction BMPs will be conducted.

d. STANDARD URBAN STORM WATER MITIGATION PLANS (SUSMPS) – APPROVAL PROCESS CRITERIA AND REQUIREMENTS FOR PRIORITY DEVELOPMENT PROJECTS

Each Copermittee shall implement an updated local SUSMP which meets the requirements of section D.1.d of this Order and (1) reduces Priority Development Project discharges of pollutants from the MS4 to the MEP, (2) prevents Priority Development Project runoff discharges from the MS4 from causing or contributing to a violation of water quality standards, and (3) manages increases in runoff discharge rates and durations from Priority Development Projects that are likely to cause increased erosion of stream beds and banks, silt pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

(1) Definition of Priority Development Project

(a) Priority Development Projects are: a) all new Development Projects that fall under the project categories or locations listed in section D.1.d.(2), and b) those redevelopment projects that create or, ~~add or replace~~ at least 5,000 square feet of impervious surfaces on an already developed site that falls under the project categories or locations listed in section D.1.d.(2). Where redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to SUSMP requirements, the numeric sizing criteria discussed in section D.1.d.(~~7~~6)(c) applies only to the addition, and not to the entire development. Where redevelopment results in an increase of more than fifty percent of the impervious surfaces of a previously existing development, the numeric sizing criteria applies to the entire development. Where a new Development Project feature, such as a parking lot, falls into a Priority Development Project Category, the entire project footprint is subject to SUSMP requirements.

Comment [JV7]: The Copermittees recommend the deletion of "or replace" from this definition. This change was only recently discovered by the Copermittees since it was never clearly identified in any of the drafts of the Tentative Order or discussed in any corresponding version of the Fact Sheet / Technical Report. Only a vague reference to it appears in the Summary of Modifications that accompanied the March draft of the Tentative Order. This is insufficient public process for a change of this significance.

(b) In addition to the Priority Development Project Categories identified in section D.1.d.(2), within three years of adoption of this Order, Priority Development Projects shall also include all Development Projects that create one acre (43,560 square feet) or more of new impervious surface~~are equal to one acre in size or~~

Comment [JV8]: Reference to 1 acre requires clarification to avoid ambiguity in interpreting. Modified language is from San Mateo Countywide permit. It is also consistent with the language of section D.1.d(1)(a) above.

~~greater~~. As an alternative to this one acre threshold, the Copermittees may collectively identify a different threshold, provided the Copermittees' threshold is at least as inclusive of Development Projects as the one acre threshold.

(2) Priority Development Project Categories

(a) Housing subdivisions of 10 or more dwelling units. This category includes single-family homes, multi-family homes, condominiums, and apartments.

(b) Commercial developments greater than one acre. This category is defined as any development on private land that is not for heavy industrial or residential uses where the land area for development is greater than one acre. The category includes, but is not limited to: hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; airfields; and other light industrial facilities.

(c) Heavy industrial developments greater than one acre. This category includes, but is not limited to, manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas (bus, truck, etc.).

(d) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

(e) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), where the land area for development is greater than 5,000 square feet. Restaurants where land development is less than 5,000 square feet shall meet all SUSMP requirements except for structural treatment BMP and numeric sizing criteria requirement D.1.d.(6)(c) and hydromodification requirement D.1.g.

(f) All hillside development greater than 5,000 square feet. This category is defined as any development which creates 5,000 square feet of impervious surface which is located in an area with known erosive soil conditions, where the development will grade on any natural slope that is twenty-five percent or greater.

(g) Environmentally Sensitive Areas (ESAs). All development located within or directly adjacent to or discharging directly to an ESA (where discharges from the development or redevelopment will enter receiving waters within the ESA), which either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" means situated within 200 feet of the ESA. "Discharging directly to" means outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands.

(h) Parking lots 5,000 square feet or more or with 15 or more parking spaces and potentially exposed to urban runoff. Parking lot is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce.

(i) Street, roads, highways, and freeways. This category includes any paved surface that is 5,000 square feet or greater used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

(j) Retail Gasoline Outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

(3) Pollutants of Concern

As part of its local SUSMP, each Copermittee shall develop and implement a procedure for pollutants of concern to be identified for each Priority Development Project. The procedure shall address, at a minimum: (1) Receiving water quality (including pollutants for which receiving waters are listed as impaired under CWA section 303(d)); (2) Land use type of the Development Project and pollutants associated with that land use type; and (3) Pollutants expected to be present on site.

(4) Site Planning Practice Requirements

Comment [JV9]: Best Planning Practices are established as a separate section. They were previously presented as a subset of site design BMPs.

~~(a) Each Copermittee shall require each Priority Development Project to implement meet the following LID site design BMPs requirements which will collectively minimize directly connected impervious areas and promote infiltration at Priority Development Projects:~~

~~(b) The following LID site design BMPs listed below shall be implemented at all Priority Development Projects where applicable and feasible. Implement all site design BMPs from the above lists in section D.1.d.(4)(a) where determined to be applicable and feasible by the Copermittee. Each Copermittee shall develop and implement criteria to aid in determining Priority Development Project conditions where implementation of each LID site design BMP listed above below is applicable and feasible. The Copermittees are encouraged to collaborate on the development of these criteria. Each Copermittee shall require each Priority Development Project to use the criteria to demonstrate applicability and feasibility, or lack thereof, for each LID site design BMP listed below.~~ The following ~~Best~~ Planning Practices ~~(BPPs)~~ shall be incorporated into each Copermittee's local SUSMP, and their consideration shall be required as applicable during the selection of site design, source control, and treatment control BMPs for each Priority ~~Development Project~~ Each Copermittee shall incorporate into its local SUSMP ~~and encourage project applicants to consider~~ the following ~~Best~~ Site Planning Practices, and shall modify its training and education programs to foster knowledge and awareness of their use, ~~during the selection of site design, source control and treatment control BMPs:~~

Comment [JV10]: The purpose of this requirement is to establish planning practices in Copermittee programs during the first year. Specific criteria for requiring their use will be established in the Model SUSMP update (section D.1.d.(8)).

i. Promote storm water infiltration

ii. Conserve and/or re-create natural areas, soils, and vegetation
iii. Reduce impervious surfaces
iv. Disconnect impervious surfaces
v. Minimize soil compaction
vi. Drain impervious surfaces to pervious areas
vii. Avoid disturbances to natural drainages

Comment [JV11]: This is a more comprehensive list of Site Planning Practices than was previously included in the Dec. 13 draft.

(b) Prior to the development and application of criteria for determining the applicability and feasibility of Site Planning Practices pursuant to section D.1.d.(9)(b)vi and D.1.d.(10)(a) below, the Copermittees shall inform project applicants of these practices and shall encourage their consideration during the selection of site design, source control, and treatment control BMPs.

~~i. Conserve natural areas, including existing trees, other vegetation, and soils.~~
~~ii. Construct streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.~~
~~iii. Minimize the impervious footprint of the project.~~
~~iv. Minimize soil compaction.~~
~~v. Minimize disturbances to natural drainages (e.g., natural swales, topographic depressions, etc.)~~

(5) Minimum Site Design BMP Requirements

The following ~~LID~~ site design BMPs shall be implemented at all Priority Development Projects as required below:

(a) ~~Implement at least two site design BMPs from the following two lists. At least one of the site design BMPs to be implemented shall be from List 1. (Priority Development Projects with no landscaping or low traffic areas are only required to implement one site design BMP from either list):~~

~~List 1~~

~~i.~~ For Priority Development Projects with landscaped or other pervious areas, drain a portion of impervious areas (rooftops, parking lots, sidewalks, walkways, patios, etc) into pervious areas prior to discharge to the MS4. The ~~size of the~~ size or type of impervious areas that ~~are to~~ drain to pervious areas shall ~~correspond with~~ correlate to ~~the total size ability of the project's~~ pervious area's ability to infiltrate runoff, taking into consideration the pervious areas' soil conditions, slope, and other pertinent factors.

Comment [JV12]: This change is intended to clarify the relationship of impervious and pervious areas. The previous wording was confusing.

(b) ~~ii. Drain a portion of impervious sidewalks, walkways, trails, or patios into pervious areas prior to discharge to the MS4.~~For Priority Development Projects with landscaped or other pervious areas, properly design and construct the pervious areas to effectively receive and disperse runoff from impervious areas.

~~iii. For Priority Development Projects with low traffic areas and appropriate soil conditions, Cconstruct a portion of walkways, trails, overflow parking~~

~~lots, alleys, or other low-traffic areas with permeable surfaces, such as pervious concrete, porous asphalt, unit pavers, and granular materials.~~

~~List 2~~

~~(d) Conserve natural areas, including existing trees, other vegetation, and soils.~~
~~(d) Construct streets, sidewalks, or parking lot aisles to the minimum widths necessary, provided that public safety and a walkable environment for pedestrians are not compromised.~~
~~(d) Minimize the impervious footprint of the project.~~
~~(d) Minimize soil compaction.~~
~~(d) Minimize disturbances to natural drainages (e.g., natural swales, topographic depressions, etc.)~~

(6) Minimum Source Control BMP Requirements

Each Copermittee shall require each Priority Development Project to ~~implement~~include source control BMPs. The source control BMPs to be required shall:

(a) Minimize storm water pollutants of concern in urban runoff.

(b) Include storm drain system stenciling or signage.

(c) Include properly designed outdoor material storage areas.

(d) Include properly designed trash storage areas.

(e) Include efficient irrigation systems.

(f) Include water quality requirements applicable to individual priority project categories.

(7) Minimum Treatment Control BMP Requirements

Each Copermittee shall require each Priority Development Project to implement treatment control BMPs which meet the following treatment control BMP requirements:

(a) Treatment control BMPs for all Priority Development Projects shall ~~mitigate~~ (infiltrate, filter, or treat) the required volume or flow of runoff (identified in section D.1.d.(6)(c)) from all developed portions of the project, including landscaped areas.

Comment [JV13]: Minor modification of language is suggested for consistency with D.1.d(7)(b).

(b) All treatment control BMPs shall be located so as to infiltrate, filter, or treat the required runoff volume or flow prior to its discharge to any waters of the U.S. Multiple Priority Development Projects may use shared treatment control BMPs as long as construction of any shared treatment control BMP is completed prior to the use or occupation of any Priority Development Project from which the treatment control BMP will receive runoff.

(c) All treatment control BMPs for a single Priority Development Project shall collectively be sized to comply with the following numeric sizing criteria:

i. Volume-based treatment control BMPs shall be designed to ~~mitigate (~~infiltrate, filter, or treat~~)~~ the volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the County of San Diego's 85th Percentile Precipitation Isopluvial Map; or

Comment [JV14]: Minor modification of language is suggested for consistency with D.1.d(7)(b).

ii. Flow-based treatment control BMPs shall be designed to ~~mitigate (~~infiltrate, filter, or treat~~)~~ either: a) the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of a storm event; or b) the maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity (for each hour of a storm event), as determined from the local historical rainfall record, multiplied by a factor of two.

Comment [JV15]: Minor modification of language is suggested for consistency with D.1.d(7)(b).

(d) All treatment control BMPs for Priority Development Projects shall, at a minimum:

i. Be ranked with a high or medium pollutant removal efficiency for the project's most significant pollutants of concern, as the pollutant removal efficiencies are identified in the Copermittees' Model SUSMP ~~which was approved by the Regional Board or in the Copermittees' local SUSMPs as they are collectively updated according to section D.1.d.(13)~~ and most current updates thereto. Copermittees may only approve ~~T~~treatment control BMPs with a low removal efficiency ranking ~~shall only be approved by a Copermittee~~ when it conducts a a feasibility analysis ~~that shows has been conducted which exhibits that~~ implementation of treatment control BMPs with high or medium removal efficiency rankings are infeasible for a Priority Development Project or portion of a Priority Development Project.

Comment [JV16]: Modification of past tense reference to the Model SUSMP is to recognize the need for consistency with future updates.

Comment [JV17]: Minor wording changes to this paragraph are for clarity.

ii. Be correctly sized and designed so as to remove pollutants to the MEP.

iii. Target removal of pollutants of concern from urban runoff.

iv. Be implemented close to pollutant sources (where shared BMPs are not proposed), and prior to discharging into waters of the U.S.

v. Not be constructed within a receiving water.

vi. Include proof of a mechanism, to be provided by the project proponent or Copermittee, under which ongoing long-term maintenance will be conducted.

(8) Update of SUSMP BMP Requirements

The Copermittees shall collectively review and update their minimum SUSMP BMP requirements. At a minimum, this update shall include removal of obsolete or ineffective BMPs, addition of site design and source control BMP requirements that meet or exceed the minimum standards of sections D.1.d(5) and D.1.d.(6) above, and addition of BMPs that

can be used for treatment, such as bioretention cells, bioretention swales, etc. The update shall also add appropriate BMPs to any tables or discussions in the local SUSMPs addressing pollutant removal efficiencies of treatment control BMPs. In addition, the update shall include review, and revision where necessary, of treatment control BMP pollutant removal efficiencies.

(9) Update of Model SUSMP to Incorporate Low Impact Development (LID) Requirements

(a) Within eighteen months of adoption of this Order, the Copermittees shall develop and submit for RWQCB approval a modified Model SUSMP that defines minimum Low Impact Development (LID) standards and requirements to be incorporated into local Copermittees SUSMPs. If, within 60 days of submittal of the updated Model SUSMP, the Copermittees have not received in writing either (1) approval of the updated Model SUSMP or (2) a modified schedule for its review, revision, and/or approval, the updated Model SUSMP shall be deemed approved, and the Copermittees shall implement its provisions in accordance with section D.1.d(10).

(b) The modified Model SUSMP shall meet the following minimum requirements:

i. Incorporation of the Site Planning Practices identified in section D.1.d.(4) above to guide the selection of BMPs.
ii. Establishment of site design BMP requirements that meet or exceed the minimum requirements listed in D.1.d.(5) above.
iii. Establishment of source control BMP requirements that meet or exceed the minimum requirements listed in section D.1.d.(6) above.
iv. Establishment of treatment control BMP requirements that meet or exceed the minimum requirements of section D.1.d.(7) above.
v. Development of specific siting, design, and maintenance criteria for each site design and treatment control BMP listed in the updated Model SUSMP is constructed correctly and is effective at pollutant removal and runoff control.
vi. Development of criteria to aid in determining Priority Development Project conditions where implementation of each Site Planning Practice listed in section D.1.d.(4) above is applicable and feasible.
vii. Requirement for Priority Development Projects with low traffic areas and appropriate ~~and/~~or amendable soil conditions to construct a portion of walkways, trails, overflow parking lots, alleys, or other low-traffic areas with permeable surfaces, such as pervious concrete, porous asphalt, unit pavers, and granular materials.

(c) The program shall only apply to Priority Development Projects and Priority Development Project categories with a relatively low potential to generate high levels of pollutants. The program shall not apply to automotive repair shops or streets, roads, highways, or freeways that have high levels of average daily traffic.

(10) Update of Local SUSMPs to Incorporate Low Impact Development (LID) Requirements

Comment [JV18]: This was formerly D.1.d.(13). It is modified here to require that the first year review be broader to include site design and source control BMPs too.

Comment [JV19]: This is a new section. It establishes the addition of an LID approach through the update of the Model SUSMP, and clarifies the relationship of these requirements to those of the previous sections.

Comment [JV20]: The Copermittees need some certainty that RWQCB input and direction will not be received after they've implemented these provisions locally. This suggested language provides RWQCB staff with a wide range of options.

Comment [JV21]: Many San Diego area soils are not suitable for infiltration per se. This statement is modified to be inclusive of situations where amendment would be appropriate.

Comment [JV22]: This section carries over the requirements previously contained in the "LID Site Design BMP Substitution Program," section D.1.d.(7) of the December draft of the Tentative Order. Items i through iv on this list replace the ambiguous requirement of D.1.d(7) in that draft to "clearly exhibit equal or better runoff quality."

Comment [JV23]: This section is also new. Most elements are derived from existing requirements of the Dec. 13 draft.

(a) Within one year of RWQCB approval of the updated Model SUSMP Program, each Copermittee shall update its local SUSMP to implement the minimum standards and requirements established pursuant to section D.1.d.(9) above.

Comment [JV24]: An additional year will be necessary to develop and adopt ordinance changes, develop supporting guidance, train staff and project proponents, and implement final changes.

(b) In addition to the minimum standards and requirements of Section D.1.d.(9) above, each Copermittee's updated local SUSMP shall include the following:

i. Requirement that each Priority Development Project use the criteria established pursuant to section D.1.d.(9)(b)vi above to demonstrate applicability and feasibility, or lack thereof, of the Site Planning Practices listed in section D,1,d.(4) above.

ii. A review process which verifies that all BMPs to be implemented will meet the designated design criteria, and that each Priority Development Project participating in the program is in compliance with all applicable SUSMP requirements.

(11) Implementation Process

As part of its local SUSMP, each Copermittee shall implement a process to verify compliance with SUSMP requirements. The process shall identify at what point in the planning process Priority Development Projects will be required to meet SUSMP requirements. The process shall also include identification of the roles and responsibilities of various municipal departments in implementing the SUSMP requirements, as well as any other measures necessary for the implementation of SUSMP requirements.

(12) Downstream Erosion

As part of its local SUSMP, each Copermittee shall develop and apply criteria to Priority Development Projects so that runoff discharge rates, durations, and velocities from Priority Development Projects are controlled to maintain or reduce downstream erosion conditions and protect stream habitat. Upon adoption of the Hydromodification Management Plan (HMP) by the Regional Board (section D.1.g), individual Copermittee criteria for control of downstream erosion shall be superceded by criteria identified in the HMP.

(13) Waiver Provision

(a) A Copermittee may grant a waiver of~~provide for a project to be waived from the~~ numeric sizing criteria requirements ~~of implementing treatment BMPs~~described in ~~(~~sections D.1.d.~~(~~76~~)~~(c)~~)~~ or D.1.d.(9)(b)iv if infeasibility can be established. A waiver of infeasibility shall only be granted by a Copermittee when all available ~~treatment~~ BMPs have been considered and rejected as infeasible. Copermittees shall notify the Regional Board within 5 days of each waiver issued and shall include the following information in the notification:

Comment [JV25]: These changes modify the existing language on waivers to reference "numeric sizing criteria" rather than "treatment BMPs." This should broaden the requirement to include consideration of all BMPs in determining infeasibility except in instances where LID approaches are not applicable. These changes are to ensure internal consistency with other permit sections rather than to change the intent or applicability of the existing waiver provision. They would not affect the "baseline" requirements for source control and site design BMPs.

i. Name of the person granting each waiver;

ii. Name of developer receiving the waiver;

iii. Site location;

iv. Reason for waiver; and

v. Description of BMPs required.

(b) The Copermittees may collectively or individually develop a program to require project proponents who have received waivers to transfer the savings in cost, as determined by the Copermittee(s), to a storm water mitigation fund. This program may be implemented by all Copermittees that issue waivers. Funds may be used on projects to improve urban runoff quality within the watershed of the waived project. The waiver mitigation program should, at a minimum, identify:

i. The entity or entities that will manage the storm water mitigation fund (i.e., assume full responsibility for);

ii. The range and types of acceptable projects for which mitigation funds may be expended;

iii. The entity or entities that will assume full responsibility for each mitigation project including its successful completion; and

iv. How the dollar amount of fund contributions will be determined.

---

f. BMP VERIFICATION

Comment [JV26]: See comment 1.

Prior to occupancy of each Priority Development Project subject to SUSMP requirements, each Copermittee shall inspect the constructed ~~LID~~ site design, source control, and treatment control BMPs to verify that they have been constructed in compliance with all specifications, plans, permits, ordinances, and this Order. This initial BMP verification inspection does not constitute an operation and maintenance inspection, as required above in section D.1.e.(2)(c).

WESTON SOLUTIONS, INC.
2433 Impala Drive
Carlsbad, CA 92010
(760) 931-8081 / (760) 931-1580 FAX
www.westonsolutions.com

December 27, 2006

To: Jo Ann Weber, County of San Diego
From: David Renfrew, Weston Solutions, Inc.

Subject: Recommendations for clarification of toxicity in the Triad Approach to Determining Follow-Up Actions, Tentative Receiving Waters and Urban Runoff Monitoring and Reporting Program (RWQCB Order#: R9-2006-0011).

The following is a recommendation for clarification of footnote #5 to Table 3. (Triad Approach to Determining Follow-Up Actions), Tentative Receiving Waters and Urban Runoff Monitoring and Reporting Program (RWQCB Order#: R9-2006-0011).

Acute toxicity tests are primarily used to determine the concentration of test water that produces a specific adverse effect on a specified percentage of test organisms during a short-term exposure period (i.e., usually $\leq$ 4 days). In general, the key endpoint recommended in acute toxicity tests of effluents and receiving waters to freshwater organisms is the median lethal concentration (LC_{50}; Figure 1), or the concentration of test water to which test organisms are exposed that is estimated to be lethal to 50% of the test organisms (USEPA 2002a). The no observed effect concentration (NOEC), is a less commonly used, but accepted endpoint in acute toxicity tests, and indicates the highest concentration of test water in a toxicity test that has no statistically significant adverse effect on the exposed population of test organisms when compared to the controls (Figure 1). However, the NOEC is not recommended as an endpoint for the County of San Diego and Copermittees for two reasons. First, this endpoint does not indicate toxicity, but instead indicates a lack of toxicity. Second, while the LC_{50} is a calculated value that is statistically determined based on all of the data points and the shape of the toxicity response curve (as shown in Figure 1), the NOEC is only a point-estimate concentration that is based in part on the experimental design, and the concentrations of test water chosen (Figure 1). Based on the above discussion, **Weston recommends the LC_{50} as the key endpoint to be reported for the acute toxicity tests of storm water samples.**

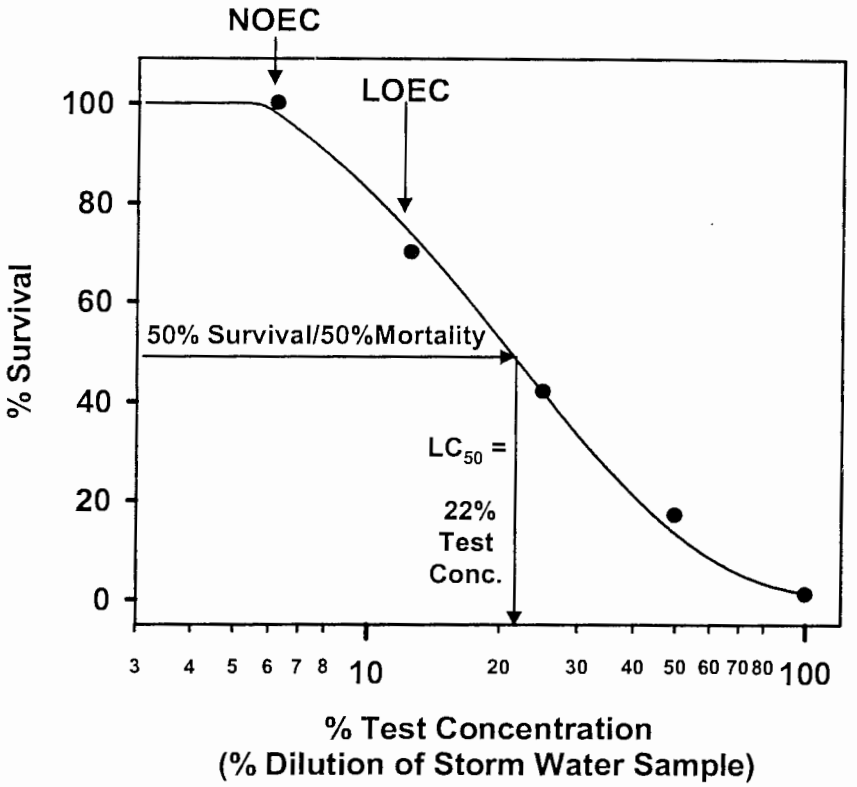

Figure 1. Graph of survival vs. test concentration of stormwater illustrating how NOEC and LOEC are values based on point estimates of actual concentrations, while the LC_{50} is a value that is calculated based on all of the measurements presented in the toxicity curve.

In contrast to acute toxicity tests, in chronic toxicity tests, there are two key endpoints that are typically measured in chronic tests of effluents and receiving waters to freshwater organisms, the no observed effect concentration (NOEC) and the lowest observed effect concentration (LOEC), or the lowest concentration of test water in a toxicity test that has a statistically significant adverse effect on the exposed population of test organisms when compared with the controls (USEPA 2002b). Chronic toxicity tests may be defined as those where exposure durations are greater than 10% of the test organisms life span. For the purposes of chronic toxicity testing for the County of San Diego and Copermittees, Weston recommends that both the NOEC and the LOEC be statistically determined and presented as part of all chronic toxicity tests. It should be noted, however, that in addition to measurements of NOEC and LOEC, the LC_{50} is also reported for chronic tests in which survival is measured. Similarly, for chronic tests in which sublethal effects are measured (i.e., reduced number of young or growth inhibition), another endpoint reported is the median effective concentration (EC_{50}). Similar to the LC_{50}, the EC_{50} is the concentration of test water to which test organisms are exposed that is estimated to cause an effect to 50% of the test organisms.

Definition of Toxicity and Persistent Toxicity

Toxicity is defined as the capacity of an agent or material (in this case storm water) to cause adverse effects in a living organism upon exposure. In the context of the toxicological analyses of storm water samples in the County of San Diego Regional Monitoring Program, the definition of persistent toxicity, may be defined as the re-occurring toxicity of storm water (to a specific acute or chronic test organism) in at least 50% of the samples taken for a given location over a 12 month period (two wet weather events and/or two dry weather events; see footnote 2, of Table 3, p. 6 of Tentative Receiving Waters and Urban Runoff Monitoring and Reporting Program No. R9-2006-0011). Based on the discussion above, **for acute toxicity tests, Weston recommends that the LC_{50} of ≤100% test concentration (percent storm water sample) be used to define toxicity in a sample. For chronic toxicity tests, Weston recommends that the LOEC of ≤100% test concentration (percent storm water sample) be used to define toxicity in a sample.** The LOEC should be used instead of the NOEC because the LOEC is indicative of concentrations that are toxic to test organisms relative to control treatments while the NOEC is indicative of concentrations that are not toxic to test organisms (see definitions above). Table 1 and Table 2 (below) provide examples of how toxicity results are presented under the current monitoring program. Table 1 and Figure 2 show examples of sample results with no observed toxicity in any concentration. Table 2 shows an example of a hypothetical sample with observed toxicity in only the 100% (undiluted storm water sample). The LC_{50} may vary depending on the statistically derived curve developed from the sample dilutions run (also shown in Figure 1). Table 3 and Table 4 provide examples of the recommended reporting of toxicity results for the new Tentative Receiving Waters and Urban Runoff Monitoring and Reporting Program No. R9-2006-0011. Table 3 shows the example of sample results with no observed toxicity in any concentration. Table 4 shows an example of a hypothetical sample with observed toxicity in only the 100% (undiluted storm water sample).

Table1. Example of results with no observed toxicity. Current reporting for toxicity under Order R9-2001-01

Toxicity Test	Endpoint	Result
Ceriodaphnia 96-hr survival	LC50 (%)	>100
Ceriodaphnia 7-day survival	NOEC (%)	100
Ceriodaphnia 7-day reproduction	NOEC (%)	100
Hyalella 96-hr survival	NOEC (%)	100
Selenastrum 96-hr growth	NOEC (%)	100

Table 2. Example of results with observed toxicity in the 100% Storm Water sample only (no toxicity in diluted samples). Current reporting for toxicity under Order R9-2001-01

Toxicity Test	Endpoint	Result
Ceriodaphnia 96-hr survival	LC50 (%)	100*
Ceriodaphnia 7-day survival	NOEC (%)	50
Ceriodaphnia 7-day reproduction	NOEC (%)	50
Hyalella 96-hr survival	NOEC (%)	50
Selenastrum 96-hr growth	NOEC (%)	50

** This statistically derived value is calculated based on the toxicity test curve as seen in figure 1..*

Table 3. Example of results with no observed toxicity. Recommended reporting for toxicity under new Tentative Order R9-2006-0011

Toxicity Test	Endpoint	Result
Ceriodaphnia 96-hr survival	LC50 (%)	>100
Ceriodaphnia 7-day survival	LOEC (%)	>100
Ceriodaphnia 7-day reproduction	LOEC (%)	>100
Hyalella 96-hr survival	LC50 (%)	>100
Selenastrum 96-hr growth	LOEC (%)	>100

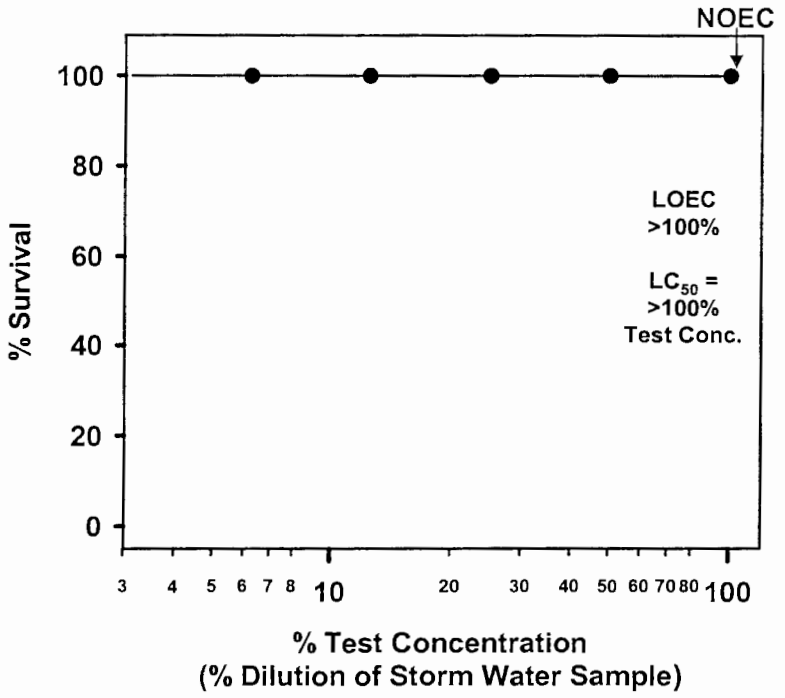

Figure 2. Example of no observed toxicity at any test concentration (dilution of storm water). In this example the NOEC = 100% storm water sample while the LOEC and the LC50 are greater than 100% storm water sample.

Table 4. Example of results with observed toxicity in the 100% Storm Water sample only (no statistically significant toxicity in diluted samples). Recommended reporting for toxicity under new Tentative Order R9-2006-0011.

Toxicity Test	Endpoint	Result	
Ceriodaphnia 96-hr survival	LC50 (%)	90*	
Ceriodaphnia 7-day survival	LOEC (%)	100	→ See Figure4
Ceriodaphnia 7-day reproduction	LOEC (%)	100	
Hyalella 96-hr survival	LC50 (%)	76.5*	→ See Figure 3
Selenastrum 96-hr growth	LOEC (%)	100	

** This statistically derived value is calculated based on the toxicity test curve as seen in figure 1. Values may be different based on the observed effect in each dilution of storm water.*

Determination of Follow-Up Action to Perform Toxicity Identification Evaluations

When determining whether a toxicity identification evaluation (TIE) should be performed on a sample demonstrating persistent toxicity, as defined above, there are additional criteria that must be met. If the persistent toxicity is occurring in an acute toxicity test of the storm water samples, then the there must be at least 50% mortality or greater in the 100%, or undiluted, storm water sample for the initiation of a TIE. For example, in Figure 3, there is only 40% survival in the 100% or undiluted storm water sample. Here, a TIE would be initiated, if this site had been pre-determined as one demonstrating persistent toxicity.

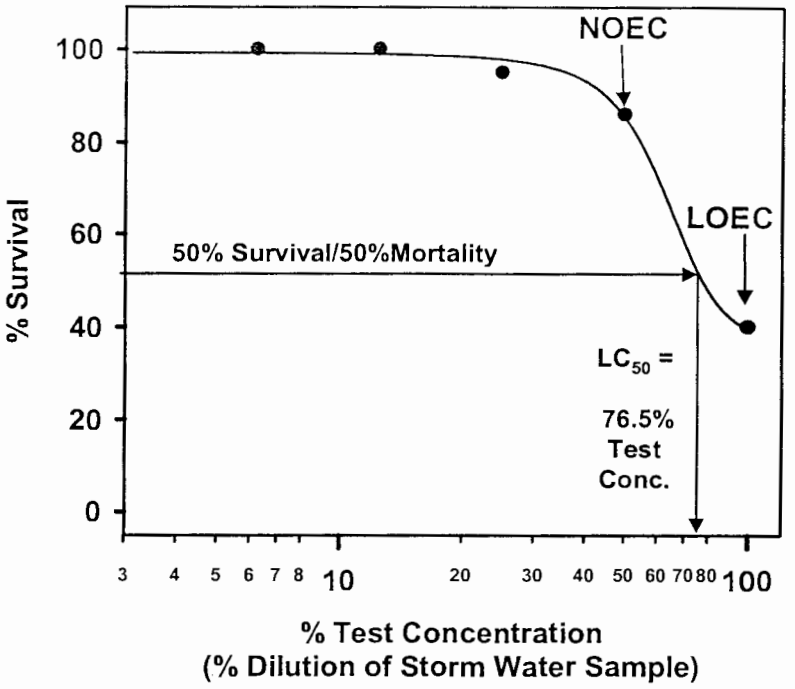

Figure 3. Example of toxicity in the 100% storm water sample (i.e., test concentration) for the acute *Hyalella azteca* 96-hour survival test. In this example of an acute toxicity test, the LC_{50} is considered the key endpoint, and was calculated at 76.5% storm water sample. The NOEC and LOEC are not considered key endpoints, however, these were determined to be 50% and 100% storm water samples, respectively.

In contrast, if there is only slight mortality (i.e. 25% mortality / 75% survival) in the 100% or undiluted storm water sample (as depicted in Figure 4), then a TIE may not be feasible. This is because most of the manipulations in the TIE are performed to test whether toxicity is removed from a sample after the chemical or physical manipulation. There must be statistically significant differences between treated and untreated samples to verify the cause of toxicity. Thus, if there is not significant toxicity at the beginning of the test, the TIE process may not differentiate between treated and untreated manipulations and would likely result in inconclusive TIEs.

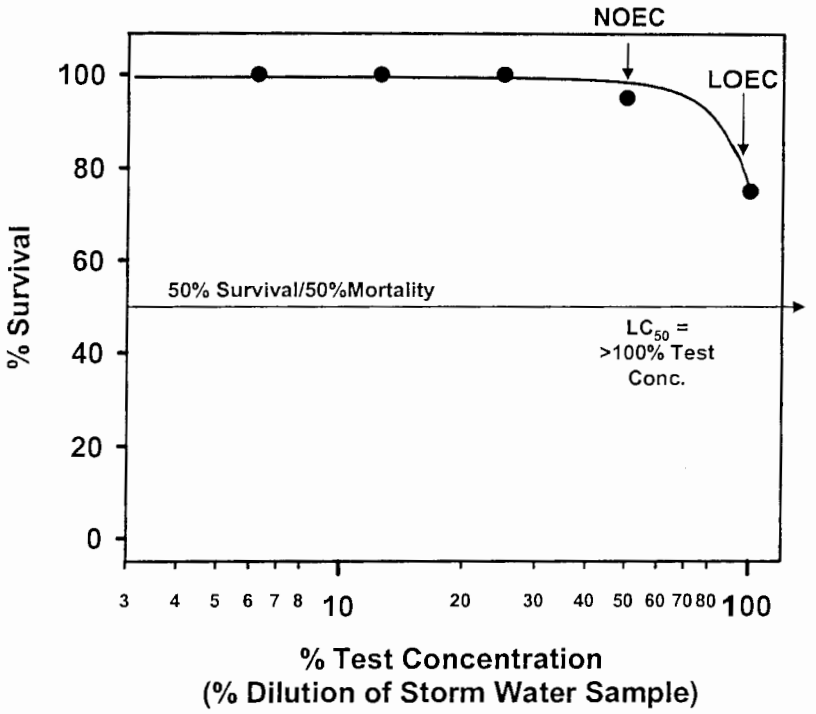

Figure 4. Example of toxicity in the 100% stormwater sample (i.e., test concentration) for the chronic *Ceriodaphnia dubia* 7-day survival test. In this example the NOEC = 50% storm water sample while the LOEC = 100% storm water sample. The LC_{50}, while calculated to be >100% storm water sample, is not considered a key endpoint for reporting purposes in chronic tests.

Similar to acute toxicity tests, if the persistent toxicity is occurring in a chronic test of the storm water samples, then there must be approximately 50% mortality or 50% toxicity (i.e., if the toxic effect is growth, reproduction, or a sublethal endpoint) in the 100% or undiluted storm water sample for the initiation of a TIE.

With regard to the information provided above, we have provided recommended changes to Table 3 (Triad Approach to Determining Follow-Up Actions) of the Tentative Receiving Waters and Urban Runoff Monitoring and Reporting Program (RWQCB Order#: R9-2006-0011). Recommended language changes are provided in Attachment A with changes highlighted in yellow.

References

United States Environmental Protection Agency (USEPA 2002a). Methods for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fifth Edition. EPA 821-R-02-012. Office of Water. October.

United States Environmental Protection Agency (USEPA 2002b). Methods for Measuring Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition. EPA 821-R-02-013. Office of Water. October.

Appendix A

Recommended Changes to Table 3. of the Tentative Receiving Waters and Urban Runoff Monitoring and Reporting Program (RWQCB Order#: R9-2006-0011).

4. FOLLOW-UP ANALYSIS AND ACTIONS

When results from the chemistry, toxicity, and bioassessment monitoring described above indicate urban runoff-induced degradation at a mass loading or temporary watershed assessment station, Copermittees within the watershed shall evaluate the extent and causes of urban runoff pollution in receiving waters and prioritize and implement management actions to eliminate or reduce sources. Toxicity Identification Evaluations (TIEs) shall be conducted to determine the cause of toxicity as outlined in Table 3 below. Other follow-up activities which shall be conducted by the Copermittees are also identified in Table 3. Once the cause of toxicity has been identified by a TIE, the Copermittees shall perform source identification projects as needed and implement the measures necessary to reduce the pollutant discharges and abate the sources causing the toxicity.

Table 3. Triad Approach to Determining Follow-Up Actions

	Chemistry[4]	Toxicity[5,6]	Bioassessment[7]	Action
1.	Persistent exceedance of water quality objectives (high frequency constituent of concern identified)	Evidence of persistent toxicity	Indications of alteration	Conduct TIE to identify contaminants of concern, based on TIE metric. Address upstream sources as a high priority.

[3] USEPA, 1999. Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers. EPA-841-B-99-002.

[4] Persistent exceedance shall mean exceedances of established water quality objectives, benchmarks, or action levels by a pollutant known to cause toxicity for two wet weather and/or two dry weather samples in a given year.

[5] Evidence of toxicity shall mean where the Lowest Observed Effect Concentration (LOEC) for any given species is less than or equal to 100% of the test sample and observed effects are significantly different from the control.

[6] For acute toxicity, evidence of persistent toxicity shall mean where more than 50% of the toxicity tests for any given species have a median lethal concentration (LC_{50}) of less than or equal to 100% of the test sample for two wet weather and/or two dry weather samples in a given year. For chronic toxicity, evidence of persistent toxicity shall mean where more than 50% of the toxicity tests for any given species have a Lowest Observed Effect Concentration (LOEC) of less than or equal to 100% of the test sample for two wet weather and/or two dry weather samples in a given year.

[7] Indications of alteration shall mean an IBI score of Poor or Very Poor.

WESTON SOLUTIONS, INC.
2433 Impala Drive
Carlsbad, CA 92010
(760) 931-8081 / (760) 931-1580 FAX
www.westonsolutions.com

January 10, 2007

To: Jo Ann Weber, County of San Diego
From: David Renfrew, Weston Solutions, Inc.

Subject: Review of Historical Toxicity Identification Evaluation Recommendations for the San Diego County Municipal Urban Storm Water Monitoring Program.

A review of the historical toxicity identification evaluations (TIE) recommendations was performed for the four most recent monitoring years. The purpose of the review was to determine if the proposed language changes for the regional monitoring program as outlined in Weston's memo dated 12/20/06 would result in different outcomes for recommending TIEs would be different than the language presented in Regional Board Order R9-2001-01. TIEs are recommended based on the Watershed Data Assessment Framework Document (MEC, 2004). TIEs are recommended when persistent toxicity is observed over time. This means that if toxicity is observed frequently (e.g. > 50% of the time) in samples from the same site, than a TIE should be considered and field staff should be prepared to collect additional sample from the next sampling event. The Weston memo dated 12/20/06 sought to define more clearly when a TIE would be performed as opposed to when they are recommended and when additional sample is collected. TIEs that have been recommended over the past three monitoring years would also have been recommended under the proposed language as shown in Table 1.

Table 1. Comparison of the number of TIEs performed and recommended between the 2001-01 permit language and proposed language in Weston's memo dated 12/20/06.

Monitoring Year Report	TIE Recommendations based on 2001-01 Triad Approach Permit Language	TIE Sites and # performed in following year	TIE Recommendations based on Proposed Tentative 2006-0011 Triad Approach Permit Language	Site and # of TIEs that would have been performed in following year.
2002-2003	Agua Hedionda, Chollas, Sweetwater, Tijuana	NR	Agua Hedionda, Chollas, Sweetwater, Tijuana	NR
2003-2004	Chollas, Sweetwater	Agua Hedionda-0, Chollas-0, Sweetwater-0, Tijuana-1	Chollas, Sweetwater	Agua Hedionda-0, Chollas-0, Sweetwater-0, Tijuana-1
2004-2005	Chollas, Sweetwater	Chollas-0, Sweetwater-0	Chollas, Sweetwater	Chollas-0, Sweetwater-0
2005-2006	Chollas (Confirmatory only)	Chollas-3, Sweetwater-1	Chollas (Confirmatory only)	Chollas-3, Sweetwater-1
2006-2007	TBD	Chollas-1	TBD	Chollas-1

NR = Not Reviewed
TBD = To Be Determined

TIEs that were recommended in previous years would have been recommended and triggered based on the observed toxicity from each site for either language definition. However, if toxicity

was not observed or was not significant in the sample during the initiation of the TIE, the TIE was not carried out. This would also be the case with the proposed language definition.

In summary, the proposed language change does not change when TIEs would be recommended. TIEs are based on the frequency of toxicity responses for each organism. If toxicity is observed, as long as it is significantly different from the control, it will be reported as a toxic response. If the frequency of toxic responses is determined to be persistent, a TIE will be recommended and field staff will be ready to collect sufficient sample to perform a TIE. The TIE will then be performed if toxicity is significant enough to differentiate between the TIE manipulations.

B. Natural Resources Defense Council

From: "Beckman, David" <dbeckman@nrdc.org>
To: "Phil Hammer" <PHammer@waterboards.ca.gov>
Date: 1/17/2007 10:09:19 AM
Subject: County's LID Comments

In light of the County's submission of two comment letters/emails after the January 2 deadline, NRDC offers the following very brief response regarding LID:

First, the County's proposal defers implementation of overdue storm water reduction actions for 2.5 years, by seeking 18 months to prepare a SUSMP update incorporating LID and by then seeking a full year to implement the program that they spend 18 months developing. LID is in place throughout the nation. This time frame is objectively unreasonable.

Moreover, the County has had the last five years to propose a new SUSMP and to propose a program that meets MEP. They simply chose not to do so, ignoring MEP-compliant options like LID until other stakeholders raised them, and only now seeking to prepare a program sometime during the middle of the permit cycle. This is not an adequate approach. Indeed, even after comments on the first public draft of the permit were submitted, the County has had more than 6 months to propose a program. Now, days before the delayed hearing on the Permit, it proposes...merely more delay.

In addition, the County seeks to remove numerous references to "LID" where they currently appear in the draft permit, which would reduce their obligations to meet LID standards and approaches in the 18 month SUSMP update process they seek.

They also seek to strip the permit draft of existing substantive LID requirements which, although not sufficient in our view, are beneficial compared to the County's proposal.

While it might appear the County seeks to merely defer these requirements pending an 18 month stakeholder process, we believe they propose to largely denude the permit draft of substantive LID requirements. This would reduce their clear obligations during and after the 18 month proposed process and would mean that what comes out of this process is uncertain at best.

In short, we strongly oppose deferral of a LID program to sometime in the future; oppose any permit that would lack clear LID standards in any

case, and oppose the general tack that some cities take of not meeting CFR obligations to propose an adequate program and then seeking after the fact years more to rectify the original omission.

In addition, we believe that any development program permit language ultimately adopted by the Board should have some very basic intent language regarding LID. We propose language such as the following for your consideration:

The permittees shall maximize the use of Low Impact Development management practices and principles as a means of reducing storm water runoff.

This language could be used in any version of the permit, including the County's proposal that we do not support (for example, it could be used where the County provides language that requires them to undertake an update of the SUSMP program within 18 months).

We appreciate staff's efforts here and ask that you reject attempts to lengthen stakeholder debate and defer the time by which a program that truly meets the MEP standard is in place.

Thank you.

David S. Beckman
Senior Attorney & Director, Coastal Water Quality Project
Natural Resources Defense Council